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A REPORT UPON THE MASTER PLAN
CLAYTON, MISSOURI

A Report Upon
THE MASTER PLAN
Clayton, Missouri

City Plan Commission

Harland Bartholomew and Associates
City Planners
St. Louis, Missouri

September, 1958

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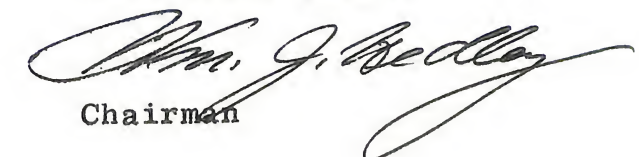
The Mayor and Board of Aldermen
City of Clayton
Missouri

Gentlemen:

It is our privilege to submit to you this Master Plan Report which we commend to those who occupy official positions in organizations concerned with the affairs of our community and to all of our citizens as a guide to be followed in the planning and execution of public and private improvements to the end that a mutuality of benefit may be derived therefrom and that Clayton may continue to advance and prosper.

In the accomplishment of our task over the past year and a half during which this report was prepared we acknowledge that, acting with diligence as our watchword, we have enjoyed excellent cooperation from our consultants, Messrs. Russell H. Riley and Ernest Combs, and very able counsel so generously given by City Attorney F. William Human, Jr. We recognize that we have had valuable suggestions from many organizations and individuals. In our study of the bulk zoning concept for commercial areas we received singularly effective assistance from a special advisory committee consisting of Vice Chairman Fred M. Switzer, Mr. Lincoln B. Hockaday, and Dean Alexander S. Langsdorf.

Very truly yours,


Chairman

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City Plan Commission
Clayton, Missouri

Gentlemen:

We are pleased to submit herewith the accompanying report upon The Master Plan for Clayton.

Your community has an unusually large amount of fine, attractive and valuable development. At the same time it is, and will continue to be, confronted with difficult problems related to growth and development. Not the least of these is the matter of protecting and maintaining your desirable conditions, but improving traffic movements and providing adequate off-street parking facilities are equally important.

Work upon developing the Master Plan has continued for nearly two years. This has enabled all of the preliminary proposals to be thoroughly studied not only by your Commission but also by local officials and some citizens. The public hearing upon the plan for the Central Business District enabled citizens to submit comments and suggestions. Thus, while much time and effort was utilized, a very sound plan has resulted which can be consistently supported by your Commission, the Board of Aldermen and the local officials.

We wish to express our appreciation for the substantial assistance given by members of your Commission and by local officials during the preparation of the plan. It has been a pleasant and interesting project and we are sure that the citizens will gain many advantages therefrom.

Respectfully submitted,

HARLAND BARTHOLOMEW AND ASSOCIATES

By *Russell H. Riley*

PREFACE

In the preparation of this report the members of the City Plan Commission and its consultants have recognized certain predominant characteristics of the City of Clayton and we present herein certain recommendations for solution of its immediate problems and for its orderly growth and development.

It is recognized that:

1. Clayton is primarily a fine residential community;
2. It has a central business district development substantially greater than is normal for a city in its population bracket;
3. It is the seat of government of an urbanized county with a rapidly expanding population;
4. Although it has little remaining vacant property, the city is experiencing growth through redevelopments and greater intensity of use;
5. It is confronted with the generally current demands imposed on close-in suburban communities for traffic relief and expanded parking facilities; and
6. It possesses important assets in facilities devoted to well-established programs of cultural and recreational activities.

In the formulation of recommendations the following principles have been observed:

1. The residential character of the city must be preserved, with no material change in population densities;

2. Sound development of the central business district should be encouraged within the area heretofore zoned for that purpose;
3. An adequate major street system is necessary in order to expedite traffic flow and to reduce to a minimum vehicular movements through residential areas;
4. Bypass routes are essential to carry through traffic around the city and around the central business district;
5. Additional parking facilities are necessary to maintain the health of the central business district in competition with other shopping center developments;
6. Physical improvements should be so planned as to protect and preserve the greatest measure of usefulness of the fine educational institutions and recreation facilities within the city;
7. Coordination of the planning proposals of adjacent municipalities is essential to a successful program of accomplishment; and
8. Zoning regulations of the city, although now reasonably modern, should conform to the best current standards and terminology so as to promote orderly growth and development under simple administrative and enforcement procedures.

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
CENTRAL BUSINESS DISTRICT	3
Past and Current Trends	3
Existing Conditions in Central Business District	8
Existing Parking Facilities and Their Use	13
Parking and Traffic	18
Estimated Future Parking Needs	22
Proposed Improvements	24
Recommended Parking Policies and Procedures	31
Method of Financing Parking Facilities	34
Suggested Steps to Consummate Proposed Parking Program	34
MAJOR STREETS	36
Introduction and Summary	36
Existing Conditions and Problems	37
Future Traffic Demands	44
Proposed Major Street Plan	48
Traffic Control and On-street Parking	56
PARKS AND PLAYGROUNDS	61
Need for Local Parks	61
Proposed Park and Recreation Areas	62
ZONING REGULATIONS	65
Proposed Zoning Regulations	65

INDEX TO PLATES

<u>Plate</u>		<u>Page</u>
1	Trend in Retail Sales 1939-1956	6
2	Trends in Commercial Uses 1947-1956	7
3	Use of Existing Buildings 1958	8
4	Comparison of Commercial Floor Area and Office Floor Area	10
5	Relationship of Commercial Floor Area and Parking Spaces	12
6	Existing Parking Facilities	13
7	Use of Curb Parking Spaces	15
8	Peak-Hour Traffic Flow, Street Capacity and Pavement Width	18
9	Proposed Land Use and Parking Plan	24
10	Geographic Location	37
11	24-Hour Traffic Flow - 1956	38
12	Traffic Demand and Capacity	46
13	Major Street Plan	48

INDEX TO TABLES

<u>Table</u>		<u>Page</u>
1	Trends in Building Construction 1948-1957	4
2	Distribution of Office and Retail Store Space - 1958	11
3	Relationship Between Commercial Floor Area and Parking - 1958	13
4	Existing Parking Facilities - 1958	14
5	Estimated Present and Future Parking Requirements	23

INTRODUCTION

Clayton has engaged over the years in several phases of planning. New and revised zoning ordinances have represented the major portion of its city planning but there have also been several plans for individual areas or for particular problems. However, unlike some of the other suburban communities, the city has never before prepared a comprehensive or master plan dealing with the several physical facilities.

Like many other nearby suburban areas, Clayton has enjoyed a substantial growth since 1920 - first residentially and then commercially. The character and value of this local development are well above average for suburban communities and the citizens are justly proud thereof - particularly of the residential areas. The city is widely recognized for four major constituent features, namely: (1) residential development, (2) the county seat, (3) a quality shopping center, and (4) more recently, development of office buildings.

Out of these assets arise certain conflicts. As the county seat and an important shopping and office center, Clayton attracts much traffic from the areas beyond. These cars create traffic congestion and their movement and parking upon local streets detract from some of the residential development. However, not all of the local traffic problems are caused by the offices or the business development. Clayton is a small portion of a large urban area and much traffic to and from other portions must traverse the community even though it doesn't stop therein. Another conflict arises from the attempts of owners of commercial property to locate parking lots in residential districts. This is partly due to lower property costs in the latter areas - although some of the asking prices tend to minimize economy - and partly to the fact that existing commercial development sometimes makes it difficult to secure convenient parking areas. Finally, the frequent requests for changes to commercial zoning - spurred by commercial growth and profit desire - create a continuous threat to residential character and value.

These problems and conflicts must be resolved - otherwise Clayton will lose its many advantages and all interests will suffer. Each must be appraised and a plan developed that can be widely supported and consistently followed. They are difficult, but not insurmountable. It is simply a matter of determining what will be in the best interests of the entire community.

The current planning program dealing with these problems has as its objective the formulation of a master plan. The normal master plan comprises some eight to twelve phases. However, inasmuch as Clayton is almost completely developed and has an above-average standard of physical facilities, and as there are certain planning programs of the county or metropolitan area in process, the current study is concerned with only three subjects. These are (1) the central business district, its extent and the traffic and parking problems therein, (2) major streets and means of facilitating local vehicular movement, and (3) desirable revisions in the zoning regulations. Data and comments are also included regarding park and playground facilities. This latter subject was carefully considered during the formulation of the plan and the Commission strongly recommended that the area at the northwest corner of Clayton and Big Bend Roads be acquired by the city, which action was subsequently approved by the voters.

CENTRAL BUSINESS DISTRICT

Because of the importance and the problems of the central business district, it is only logical that it be first discussed in this report. However, all other problems had been considered and findings determined thereon, before final conclusions were reached on the basic proposals. Insofar as possible, detailed solutions are proposed but in certain instances only fundamental principles can be suggested now.

Past and Current Trends

This section is concerned with some of the more important trends in the city's growth and development, which are related to its current problems.

Population

The St. Louis metropolitan area has grown consistently and is continuing to grow. Clayton has enjoyed a proportionate share of this growth and is within the major area that has grown most rapidly since 1940, namely St. Louis County.

Like many of the older suburban communities, Clayton's most rapid growth occurred between 1920 and 1930. In this decade, its population increased from 3,023 to 9,613, an increase of 219.5 percent. Many other cities adjoining St. Louis experienced a somewhat similar growth during this period; Webster Groves, for example, one of the older outlying communities, growing from 6,792 to 16,487 persons.

Between 1930 and 1950, Clayton's population increased from 9,613 to 16,035 and by January, 1958, the city's population was estimated at more than 18,500.

This local growth has followed a normal pattern - rapid as development in the older central city reached its limits, then slower as most of the vacant area was absorbed. St. Louis County has continued to grow very rapidly since 1950 having an estimated population of 616,500 in January 1958, an increase of 50 percent since 1950. Most of Clayton's vacant property was absorbed by 1950, explaining its small population increase since that date.

Any substantial future population growth can be accomplished only by more intensive use of residential areas such as replacing single-family dwellings with apartments

Table 1

TRENDS IN BUILDING CONSTRUCTION 1948-1957

Clayton, Missouri

Year	New Dwellings	Commercial Buildings	Volume of All Construction
1948	\$704,500	\$275,000	\$1,004,500
1949	739,000	492,000	1,379,000
1950	1,117,000	1,819,000	3,282,800
1951	860,500	1,987,000	3,060,500
1952	688,000	489,000	2,315,000
1953	573,000	738,000	1,854,500
1954	819,000	2,828,500	3,900,400
1955	1,309,000	2,054,000	3,920,000
1956	694,500	1,390,000	3,232,900
1957	1,787,500	1,508,200	4,280,100

Based on estimated construction costs from annual reports of Clayton Building Department.

or creating higher densities in existing apartment districts. Either of these would tend to destroy the desirable residential character, as well as require additional physical facilities and is not recommended. Most of the residential developments in Clayton are so located that the neighborhood amenities should continue and older structures can be replaced by new homes without more intensive use.

Building Permits

Building activities in Clayton reached a high level during the mid 1920's, the value of new construction aggregating nearly \$3,800,000 in 1924. Like the rest of the nation, it experienced a rapid drop in construction during the depression years (to about \$200,000 in 1933) and except for momentary flurries during 1936 and 1938, new building did not pick up substantially until the end of World War II. Trends in building construction during the past ten years - based on the estimated costs of building permits - are summarized in Table 1.

From the standpoint of total costs, building activities in the city reached an all time high in 1957, although the total volume of construction exceeded \$3,000,000 annually in six of the last ten years. New dwellings averaged about one-third of the new building costs during this ten-year period, ranging from \$573,000 in 1953 to \$1,787,500 in 1957. Single-family residences (406) accounted for the major portion of the dwelling costs, but a number of two-family and multiple dwellings (385 living units) have been erected also.

Commercial buildings, both stores and offices, constituted about half of the total volume of construction in the past decade, varying from a low of only \$275,000 in 1948 to more than \$2,800,000 in 1954 and amounting to \$1,500,000 or more in five of the ten years. While separate figures for retail stores and for offices were not issued prior to 1952, the recent reports indicate that office buildings have accounted for three-fourths or more of the total commercial building costs in the past six years. Since most of this construction has occurred in the central business district, the building permits indicate that the majority of the new structures in this area are offices rather than retail stores, which is corroborated by the detail study discussed hereinafter.

Assessed Valuations

Data concerning trends in the assessed valuations of real estate and personal property in Clayton are listed in the following table.

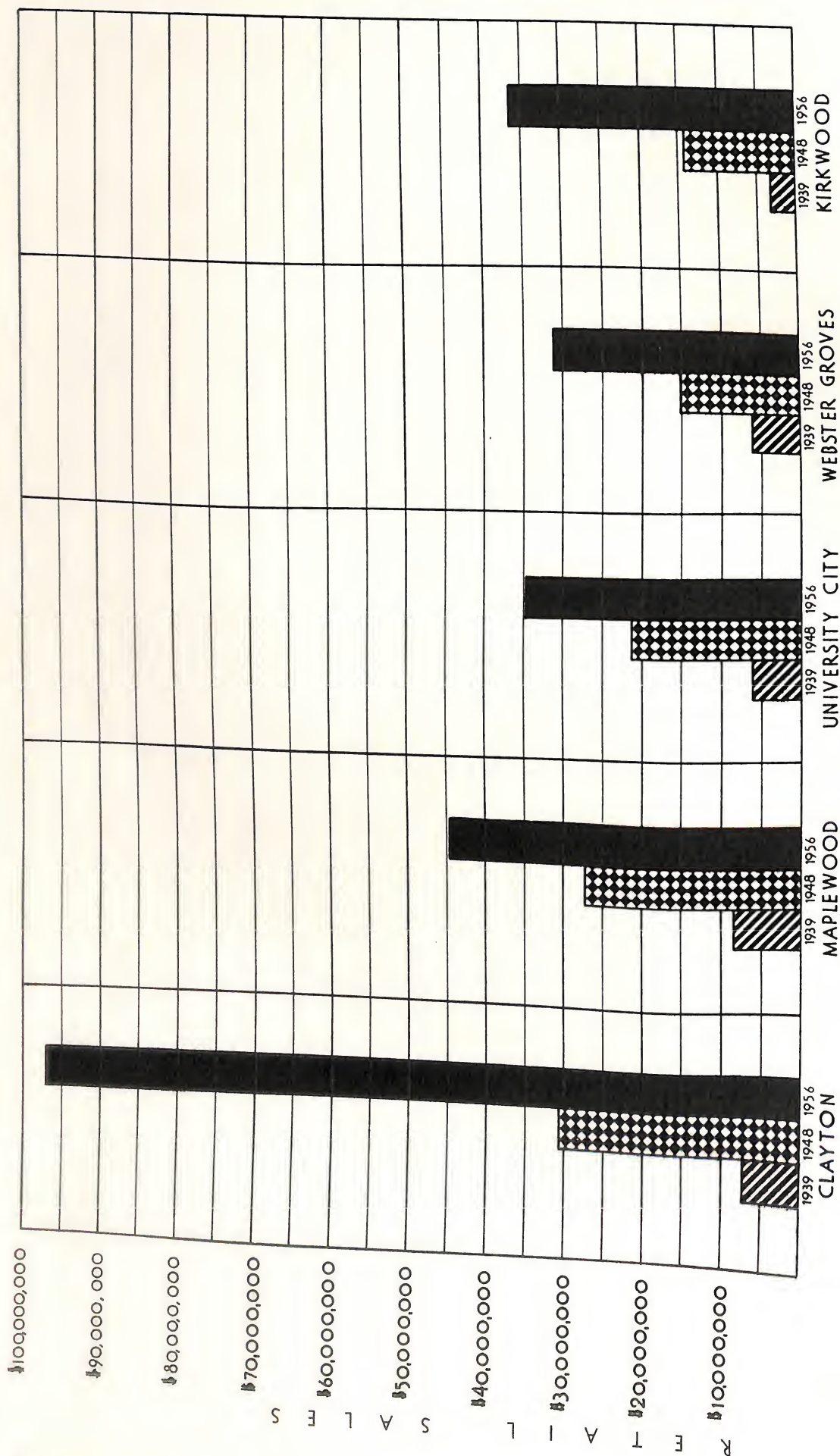
<u>Year</u>	<u>Real Estate</u>	<u>Personal</u>
1948	\$25,479,950	\$4,684,850
1949	27,211,240	4,944,670
1950	27,761,000	5,127,000
1951	28,549,710	5,549,290
1952	29,970,350	5,437,830
1953	31,266,610	6,378,190
1954	31,644,390	5,739,380
1955	55,954,810	6,315,720
1956	51,855,640	6,951,090
1957	51,653,970	7,398,070

Real estate valuations generally paralleled growth of the city, increasing very gradually up to the last three years. In 1955, however, a major increase - amounting to some 65 percent - occurred in these valuations due to the reassessment of property in Clayton. The drops in 1956 and 1957 were caused by readjustment of some of these appraisals.

On a per capita basis, real estate valuations represented about \$1,730 per person in the city in 1950, about \$2,750 per person in the past year. Thus, a per capita increase of more than \$1,000 or about 60 percent, has taken place in the past seven years. Much of this resulted from the 1955 reassessment, some from new residences, but a substantial part has occurred from the new stores and offices.

Trends in personal property assessments indicate a steady but irregular rise over the years. An over-all gain of almost 60 percent has occurred since 1948 and per capita values have grown from \$320 to \$390 - an increase of about 20 percent - since 1950.

Of the total real estate valuations in Clayton in 1955, commercial property represented approximately 25 percent. Since most of these values are created by the central business district establishments, the importance of the business district from a revenue standpoint alone is quite apparent. Further, from an analysis of income in 1955 supplied by the City Comptroller, it is estimated that some \$398,000 - or 60 percent - of the \$663,868 income came from commercial property in 1955, including income from licenses, parking meters and other charges against commercial properties in addition to the real estate tax. Without the extensive commercial development, a higher tax would be required upon all property to maintain the current city income and the high standard of services.



TREND IN RETAIL SALES 1939 - 1956

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, MISSOURI

Tax Rates

Trends in city tax rates are listed below, with separate figures for the general revenue and total city tax purposes:

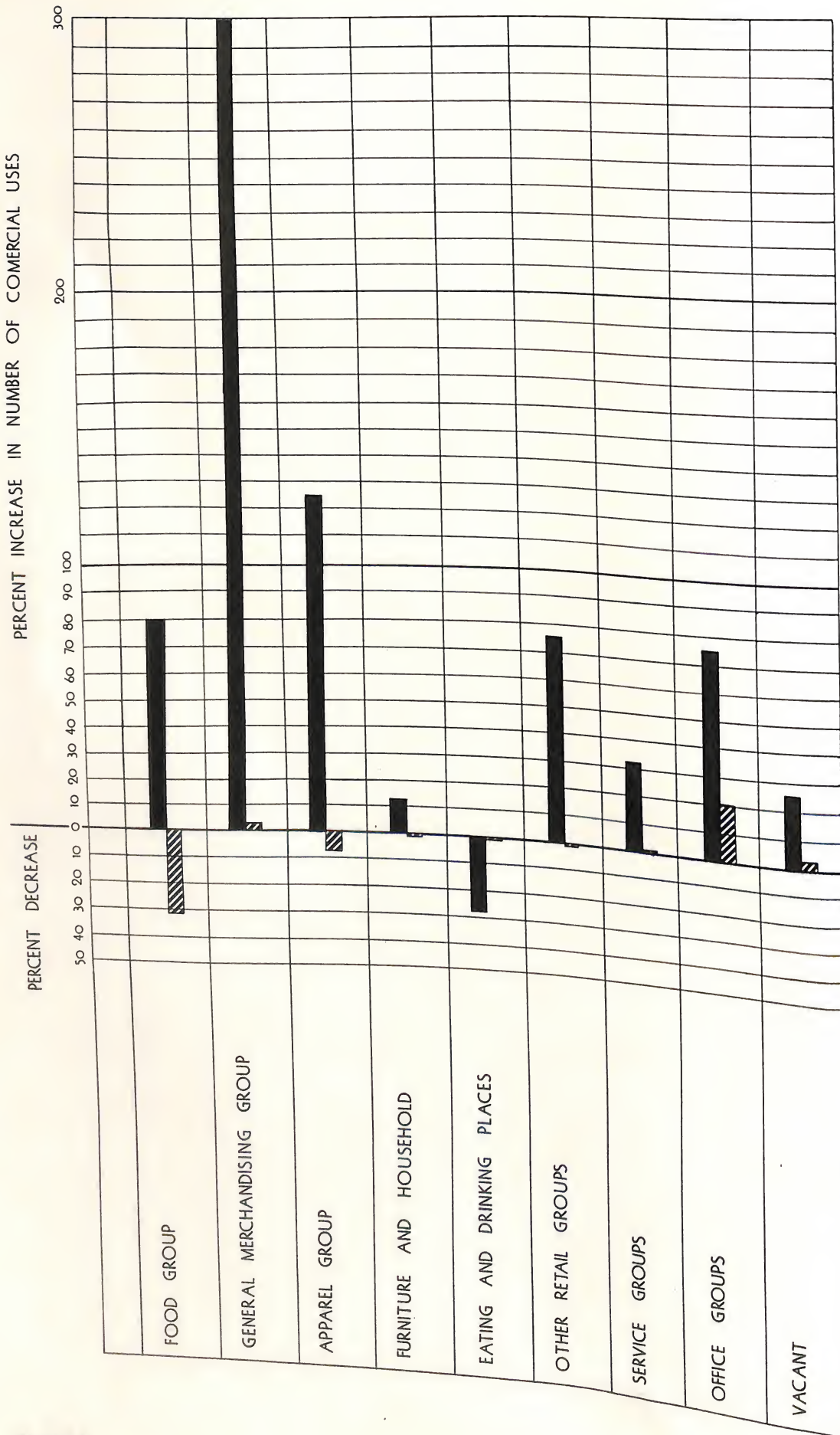
Year	Tax Rate per \$100 Valuation	
	General Revenue	Total
1930	.44	.50
1935	.42	.505
1940	.44	.57
1945	.42	.55
1950	.49	.89
1951	.51	.89
1952	.605	.89
1953	.73	1.13
1954	.73	1.12
1955	.47	.74
1956	.60	.89
1957	.63	.89

City taxes both for general revenue purposes and for other requirements have tended to increase, the principal changes occurring in the present decade. With the increasing costs of city government and the demands for new improvements and public services, this has been the experience of practically all urban communities. In a city such as Clayton, where development is now virtually complete, protection of all existing property and property values, including that in the central business area, is very important to maintain the tax base and thereby to keep future taxes as low as possible.

While it is difficult to evaluate tax rates in different communities since the standards of services and facilities may vary widely - the 1956 rate in Clayton compared quite favorably with that in other similar communities. As afore indicated, Clayton's total rate was \$0.89; Kirkwood \$0.80, Maplewood \$0.80, Webster Groves \$0.96, Ferguson \$1.00 and University City \$1.01.

Commerce and Retail Sales

The trend in retail sales in Clayton, in comparison with the sales volumes in the four other suburban communities of Maplewood, University City, Webster Groves and Kirkwood, is presented on Plate 1. The 1939 and 1948 data is from the Bureau of Census while that of 1956 is from Sales Management. The expansion of retail business in Clayton is strikingly illustrated by this chart. Thus while Clayton in 1939



TRENDS IN COMMERCIAL USES 1947-1956

CLAYTON SHOPPING DISTRICT

OUTLYING DISTRICTS ST. LOUIS AND ST. LOUIS COUNTY

HARLAND BATHOLOMEW AND ASSOCIATES
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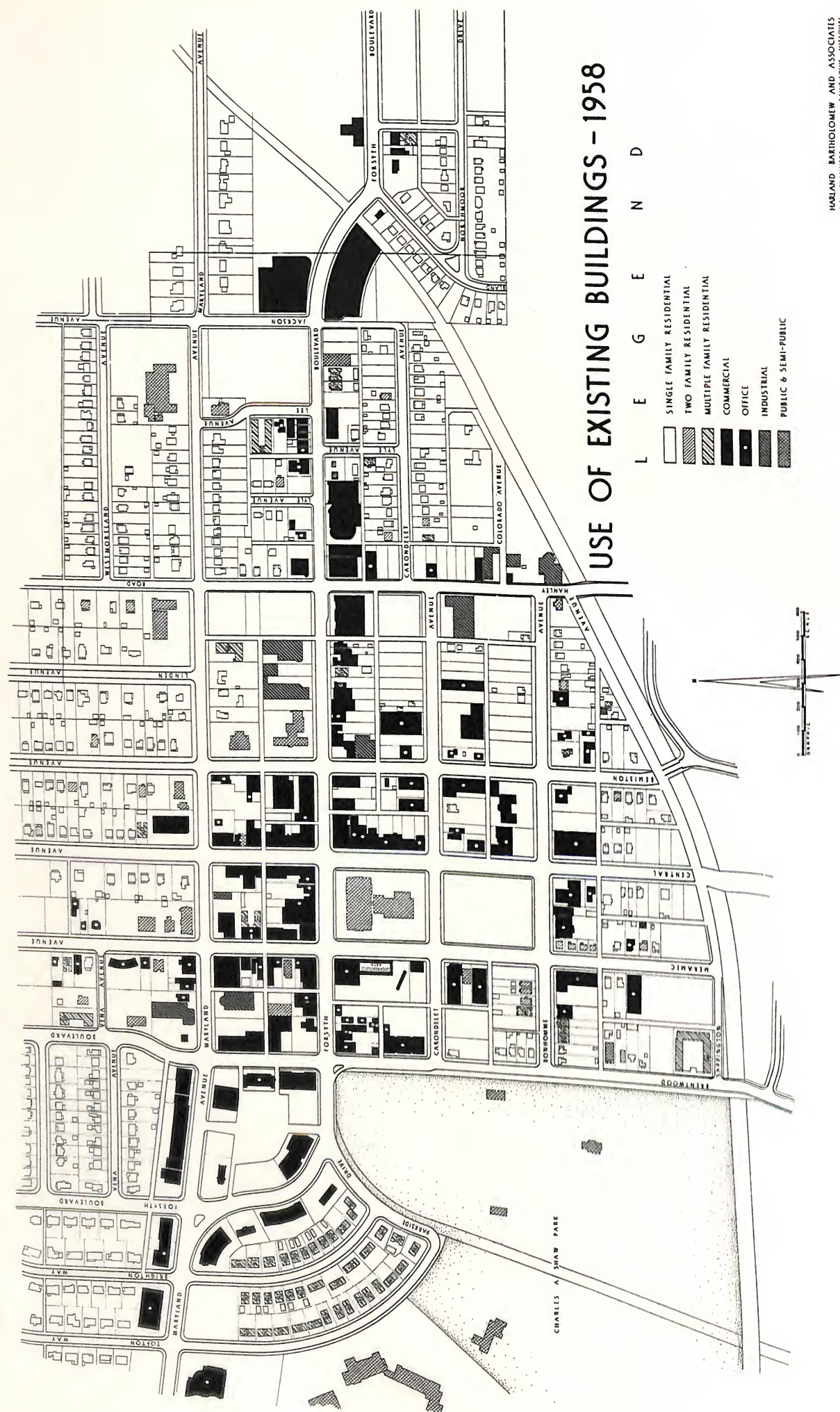
ranked below Maplewood and was only slightly higher than Webster Groves and University City, by 1948 it had eclipsed all of the other cities. Since 1948, retail sales have somewhat more than doubled in Kirkwood, approximately doubled in Webster Groves and increased by 50 percent or more in University City and Maplewood. In contrast, retail sales have more than tripled in Clayton, the latter now far outranking each of the other communities. The numerical sales increase in Clayton between 1948 and 1956 amounted to over \$66,000,000 while the increase in the others during the same period ranged from \$13,234,000 in University City to \$22,438,000 in Kirkwood.

The sales data contained herein is for the entire City of Clayton rather than the central district alone. However, the major sales are made within the central area, primarily because the branches of the larger downtown stores are located in this section.

Trends in the number of commercial enterprises, subdivided by major types of establishments, in the Clayton business district and in some 50 other outlying districts of St. Louis and St. Louis County are shown on Plate 2, based on the percentage change between 1947 and 1956. This information was compiled by Roy Wenzlick and Company, who have conducted an annual study of these commercial centers for many years.

Except for the number of eating and drinking places, all types of commercial uses have increased in number in Clayton, varying from 12 percent in the case of furniture and household goods stores to 300 percent in the general merchandise group (department stores, dry goods and variety stores). In evaluating the changes in Clayton, it should be pointed out that the number of food, general merchandise and furniture stores were rather small in 1947, so that only a few establishments were required in these groups to effect a large proportionate change.

Compared with the other districts, the Clayton business district has experienced considerable growth. For example, the number of food stores almost doubled, in contrast with an actual decline in the other areas as a whole. The few department and variety stores existing in 1947 quadrupled in number in subsequent years, while changing little in other districts, and the apparel and other retail stores increased by 125 and 76 percent respectively while declining slightly in the other centers. The office group increased substantially both in Clayton and in other districts,



Clayton showing a much larger proportionate gain, and service establishments also increased in Clayton while changing little elsewhere.

Since most of the other centers experienced some loss in retail outlets while Clayton experienced substantial increases in most of them, it is evident that the importance of the local commercial activity is increasing. The survey also revealed, however, that the expansion of the number and floor area of retail outlets in Clayton was less rapid during the past two or three years than in preceding periods. With increasing traffic and parking problems and with increasing competition from new modern shopping centers the problem in Clayton in the future will be primarily one of maintaining a high character with a nominal increase in volume rather than providing for a continuous rapid growth.

Existing Conditions in Central Business District

For purposes of this study, the area included in Clayton's central business district extends generally from Brighton Way on the west to the city boundary line on the east mainly along Forsyth Boulevard but also including the area from Maryland Avenue to the old Rock Island right-of-way between Brentwood and Hanley. An investigation of the older central portion of this district was made in 1947 from the standpoint of parking. Changes that have taken place since then and existing conditions in the district are described in the following.

Use of Existing Buildings

As graphically indicated on Plate 3, retail stores are confined largely to the frontage along Forsyth Boulevard and to Brentwood, Meramec and Central Avenues between Forsyth and Maryland, as well as along the latter west of Brentwood. Property along Central opposite the court house is also commercially used. Thus, with a few exceptions, the retail outlets form a strip development along Forsyth. There is also much office space in this area, either above the retail uses or as separate structures. The majority of the offices, however, and especially the new ones, are located south of Forsyth with many along or near Bonhomme. Although this southern portion of the business district has been zoned for commercial uses for several years, there has been no tendency whatsoever for retail outlets to locate therein.

Except along Hanley Road near the south edge of the area, the relatively few industries are somewhat scattered.

However, the garages located along Maryland and Forsyth are rather closely grouped and result in some conflict with retail stores.

Despite the concentration of commerce, many residences remain in the district, principally in the southern portion between Brentwood and Hanley. The majority of these are single-family but a few two-family dwellings as well as apartments are to be found in parts of the district. Except for the apartments along Tipton Way and the homes in Clayton Gardens, the existing dwellings are generally fairly old but many of them are well maintained. The fact that many older residences adjoin the commercial districts tends to encourage requests for additional commercial zoning.

Public and semi-public buildings within the district include the city and county offices along Forsyth, the post office along Bemiston and the school and several churches along Maryland Avenue.

Due to the importance of the Clayton business district as a regional shopping center, the district is considerably larger than would ordinarily be found in a suburban city of this size. The present business zoning in this area is summarized below.

Part of Central Area	Commercial Districts in Acres	Industrial Districts in Acres
East of Hanley Road	7.55	5.21
Hanley to Brentwood	66.58	---
West of Brentwood	12.11	---
	86.24	5.21

This commercial zoning represents about .47 acres per 100 of the present city population, but even so does not include 20.46 acres in the surrounding area (west of Tipton and north of Vena) nor that along Clayton Road and in a few other parts of the city. Since commercial development generally ranges from .25 to .35 acres per 100 persons in the average suburban community, the present commercial zoning in the Clayton district is a reflection both of its greater than average commercial development and of the future expansion anticipated in past years. While considerable growth has occurred in the district during the past decade, and particularly in the past year, the following data indicates that a substantial amount of land is still available for commercial use within the presently zoned commercial areas of the central district.

1900

1901

1902

1903

1904

1905

1906

1907

1908

1909

1910

1911

1912

1913

1914

1915

1916

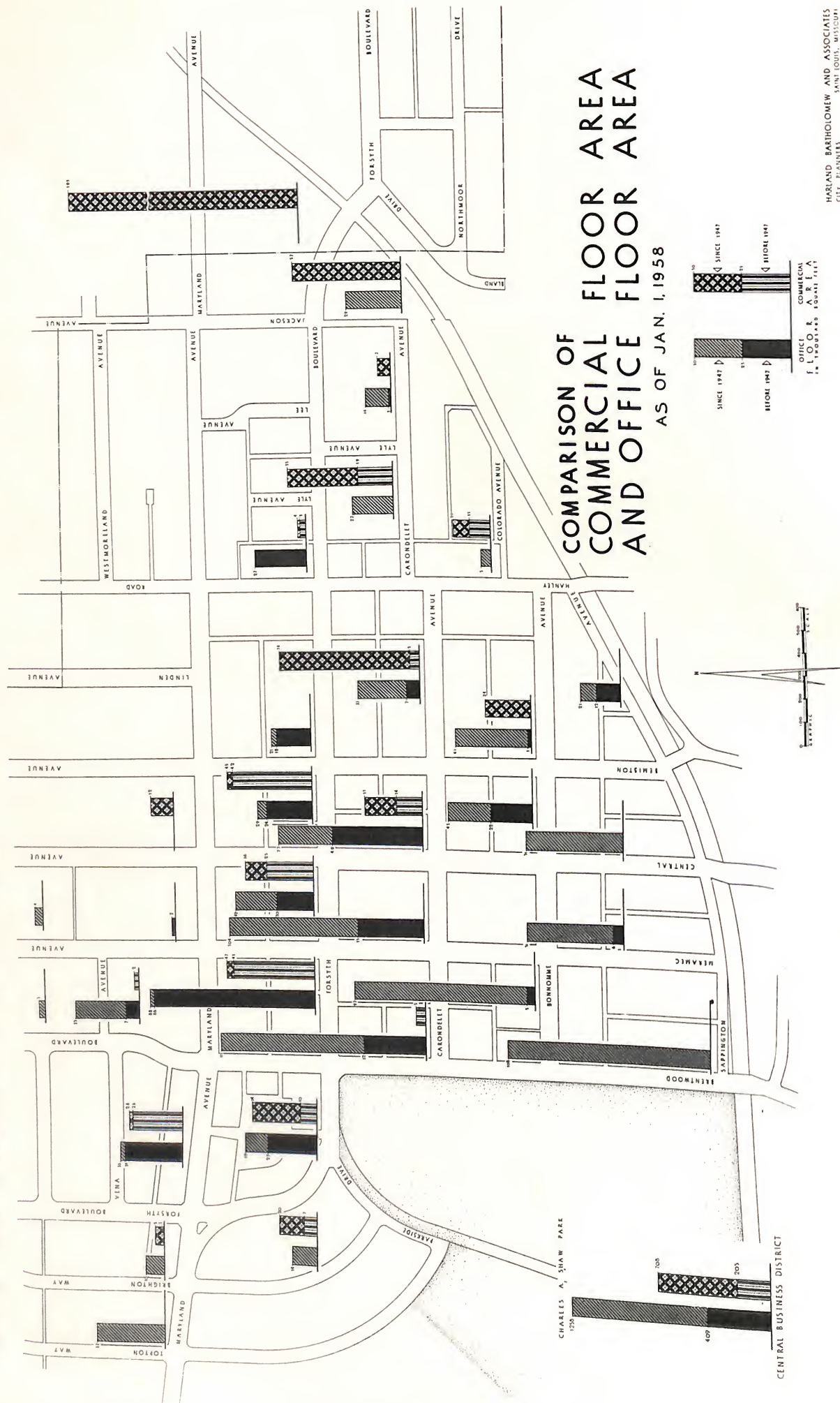
1917

1918

1919

1920

CITY OF CLAYTON, MISSOURI
CENTRAL BUSINESS DISTRICT



HARLAND BARHOLMEW AND ASSOCIATES
CITY PLANNERS
ST. LOUIS, MISSOURI

Present Use (July, 1958)	Acres	Percent
Single-family Residence	6.22	6.8
Two-family Residence	1.39	1.5
Multi-family Residence	1.10	1.2
Commercial	59.47	65.1
Industrial	4.15	4.5
Public and semi-public	9.53	10.5
Vacant	9.49	10.4
	91.35	100.0

Thus, even though commercial uses, including stores, offices and off-street parking, comprise over 60 percent of the commercial zones, there are still 8.71 acres - or nearly 10 percent of the total area - occupied by dwellings of all types and 9.5 acres - slightly over 10 percent - currently vacant. The amount of industrial land is not large. Public and semi-public property, including the courthouse and the block to its south, comprise about one-tenth of the present commercial zones.

The present arrangement of retail uses is not greatly different from that found in many older business districts of suburban communities. It has been related to the existing street system and to the flow of traffic, the latter encouraging the strip development along Forsyth. Even though local retail uses and sales have substantially increased, the arrangement of stores in Clayton is not in the most desirable manner, especially when compared with the modern regional shopping centers that will be the local stores' main competition in the future.

Existing Store and Office Space

Comparison of the existing office and retail floor areas in different parts of the business district and the amount of such space constructed between 1947 and early 1957 are indicated by Plate 4.

Retail space predominates in the blocks along Forsyth Boulevard and on Maryland Avenue immediately west of Brentwood, with especially large concentrations along the south side of Forsyth on either side of Hanley and at the east edge of the district. Relatively little new retail development has occurred since 1947 in the older portion of the district between Bemiston and Brentwood. Additional store space has been provided west of Brentwood, but the largest retail accretions are in the blocks along Forsyth both east and west of Hanley, and especially at the east edge of the

Table 2

DISTRIBUTION OF OFFICE AND RETAIL STORE SPACE - 1958
Central Business District

Clayton, Missouri

Office Space (Sq. Ft.)	Area West of Brentwood Blvd.	Central Area (Brentwood to Hanley)	Area East of Hanley Road	Total
Erected since 1947	74,150	703,220*	68,590	845,960
Total as of July, 1958 <i>Excluding area 1947</i>	132,700 58,550	1,029,770 324,550	95,790 27,200	1,258,260 411,300
Retail Store Space (Sq.Ft.)				
Erected since 1947	44,800	145,650	305,700	
Total as of July, 1958	85,400	283,450	338,950	707,800
Total as of July, 1958	218,100	1,313,220	434,740	1,966,060

* Includes Area in New Court House

-11-

district. The new Famous-Barr department store at the corner of Forsyth and Jackson accounted for nearly 40 percent of the total commercial floor area added since 1947 in the entire district.

Office space is concentrated between Bemiston and Brentwood, both along Forsyth Boulevard and in the blocks to its south. East of Bemiston, the amount of office floor area was relatively low, but has been supplemented by new construction since early in 1957. West of Brentwood such space is a little greater, but still considerably overshadowed by the extensive office area in and adjoining the district core. Some new office space has been added in most parts of the district, but by far the greatest bulk of new office construction has occurred along such streets as Carondelet and Bonhomme to the south of the older retail concentration.

New office construction has been quite extensive since 1947, following generally the pattern of offices already described since most of the office buildings are new. Thus, a considerable amount of office space has been added south of Forsyth between Bemiston and Brentwood. The large area between Central and Meramec south of Forsyth is accounted for by the new County Courthouse.

The distribution of office and store space and comparison of the areas existing and constructed since 1947 are shown in Table 2. Over 60 percent of the commercial floor area in the district as a whole is devoted to offices and about two-thirds of this office area (845,960 square feet) has been constructed since 1947. In the aggregate, office construction since 1947 has exceeded other commercial building in the district by approximately 70 percent - despite the large store areas added in the vicinity of Hanley and Jackson Avenues.

Four-fifths of the total office space, but only 40 percent of the retail space is located in the central portion of the district, between Brentwood and Hanley, and new office construction in this central area has exceeded the store space added since 1947 by a ratio of nearly five to one. Further, office buildings are continuing to dominate new construction within the central area.

Comparison with Large Regional Centers. The Northland Shopping Center at Florissant and Lucas and Hunt Roads is the largest in St. Louis County with some 625,000 square feet of floor area and 5,100 parking spaces. Other major centers such as Northland in Detroit and Bergen Mall in New Jersey contain 1,000,000 or more square feet of floor

1. The first part of the report is a general introduction to the subject of the study. It discusses the importance of the study and the objectives of the research. It also provides a brief overview of the methodology used in the study.

2. The second part of the report is a detailed description of the study area. It includes information about the location of the study area, the population of the study area, and the characteristics of the study area. It also discusses the data sources used in the study.

3. The third part of the report is a detailed description of the study results. It includes information about the findings of the study, the conclusions drawn from the findings, and the implications of the findings. It also discusses the limitations of the study and the need for further research.

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The Clayton district now comprising 707,800 square feet of retail floor area is a very large shopping center by modern standards. From the standpoint of mere number, the 7,457 parking spaces would seem to be adequate to serve these retail outlets. However, this is far from the actual condition for two basic reasons, namely (1) there are also 1,258,000 square feet of office area which requires substantial parking facilities, and thus existing parking is totally inadequate and (2) portions of the existing parking are of an inferior standard and far less convenient to the retail outlets than prevail in modern centers.

Relation of Floor Area to Parking

The amounts of office and retail floor area in each block in comparison with the number of existing curb and off-street parking spaces is graphically delineated on Plate 5. This drawing also indicates the parking deficiency or surplus in each block on the basis of the aggregate retail and office area and the total curb and off-street spaces in that block, the requirements being computed at one parking space for each 150 square feet of retail area and for each 250 square feet of office area. Since the average parking lot requires 300 square feet or more per car (including space for ingress and egress, aisles, etc., in addition to the parking stalls), the parking ratio for retail space would thus be about two to one, in comparison with the desirable modern ratio of at least three and preferably four to one. A lower ratio is generally adequate for office building areas.

The greatest deficiency in parking spaces is in the area bounded by Bemiston, Brentwood, Maryland and Bonhomme where most of the floor area is found. Within this area available spaces vary from less than 20 percent of the estimated requirement in the vicinity of Bonhomme and Bemiston to 30 to 70 percent of the current need in the blocks on both sides of Forsyth. While the large parking area south of the new courthouse helps to offset the lack of facilities in parts of its surroundings, even with these spaces the three blocks between Carondelet and Bonhomme provide only a little over three-fourths the accommodations needed. From the standpoint of requirements in the nine blocks as a whole, the aggregate parking facilities equal slightly more than half the present need.

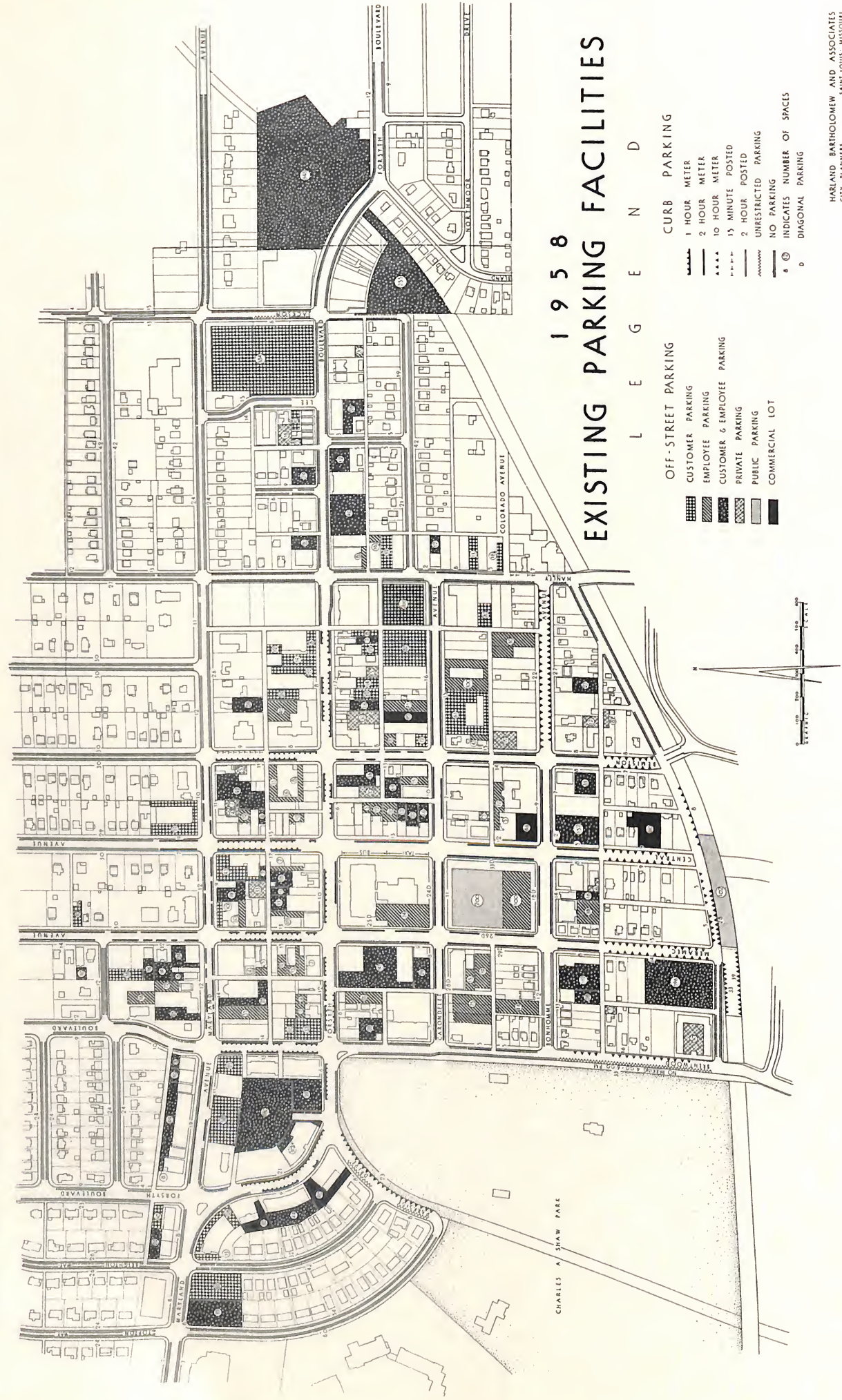


Table 3
RELATIONSHIP BETWEEN COMMERCIAL FLOOR AREA AND PARKING - 1958
Central Business District
Clayton, Missouri

	Existing Office Space (Sq.Ft.)	Parking Spaces Needed	Existing Retail Space (Sq.Ft.)	Parking Spaces Needed	Total Spaces Needed	Spaces Available *	Spaces Deficient
Area West of Brentwood Blvd.	132,700	531	85,400	569	1,100	941	159
Central Area (Brentwood to Hanley)	1,029,770	4,119	283,450	1,890	6,009	4,653	1,356
Area East of Hanley Road	95,790	383	338,950	2,260	2,643	1,863	780
Totals		5,033		4,719	9,752	7,457	2,295

* Does not include 515 curb spaces in 2-hour posted zones
along residential streets lying beyond commercial districts.

Outside this intensive central area, the differences between parking and floor areas are not quite so pronounced. There is some deficiency west of Brentwood, but this is almost entirely to the north of Maryland rather than to the south where existing parking spaces are fairly substantial. Between Bemiston and Hanley Road current floor areas and parking are fairly well balanced, the only deficiency occurring along the south side of Forsyth west of Hanley. East of Hanley, however, there is a substantial deficiency in most blocks. Thus, despite the large off-street areas at the eastern edge of the district, including over 1,200 parking spaces provided by the Famous-Barr store, there is a shortage of nearly 50 percent in the block to its south.

A summary analysis of existing floor areas and parking needs is presented in Table 3, from the standpoint of the space distribution and the parking to floor area ratios already described.

It is estimated that about 1,100 parking spaces are now needed west of Brentwood Boulevard in comparison with the 941 spaces presently available - a deficiency of 159 or almost one-seventh. A need for more than 6,000 spaces - nearly 30 percent more than the existing curb and off-street facilities combined - is indicated in the intensive central area (Brentwood to Hanley) and a requirement for over 2,600 spaces - over 40 percent more than the existing supply - is indicated east of Hanley Road. Considering the district as a whole, some 9,750 spaces or almost 2,300 over the supply, is estimated as the aggregate need which represents a current over-all deficiency of 23.5 percent.

The above data indicates the extent of one of Clayton's most widely recognized defects - inadequate parking. While this problem is found in all older business districts, it must be alleviated if Clayton is to maintain its present advantages. A deficit of 2,295 spaces is serious but later sections will show how corrections can be accomplished.

Existing Parking Facilities and Their Use

The location and type of existing parking facilities are shown on Plate 6, which also indicates the number of spaces available in each area and the various curb parking restrictions.

Table 4

EXISTING PARKING FACILITIES - 1958
Central Business District

Clayton, Missouri

Off-street Spaces

Customer	1,017	
Customer and Employees	<u>3,290</u>	
		4,307*
Employees	964	
Public	374	
Private	230	
Commercial	<u>270</u>	
Total Off-street Spaces		6,145

Curb Spaces

1-hour meters	208	
2-hour meters	587	
5-hour meters	268	
15-minute posted	16	
2-hour posted	708**	
No parking limit	<u>55</u>	
Total Curb Spaces		1,826
Total number of Parking Spaces		7,971

* Includes 1,699 spaces east of Hanley Road and 672 spaces west of Brentwood -- 55 percent of the total.

** Includes approximately 515 spaces along streets beyond the commercial and business zones.

Curb Parking

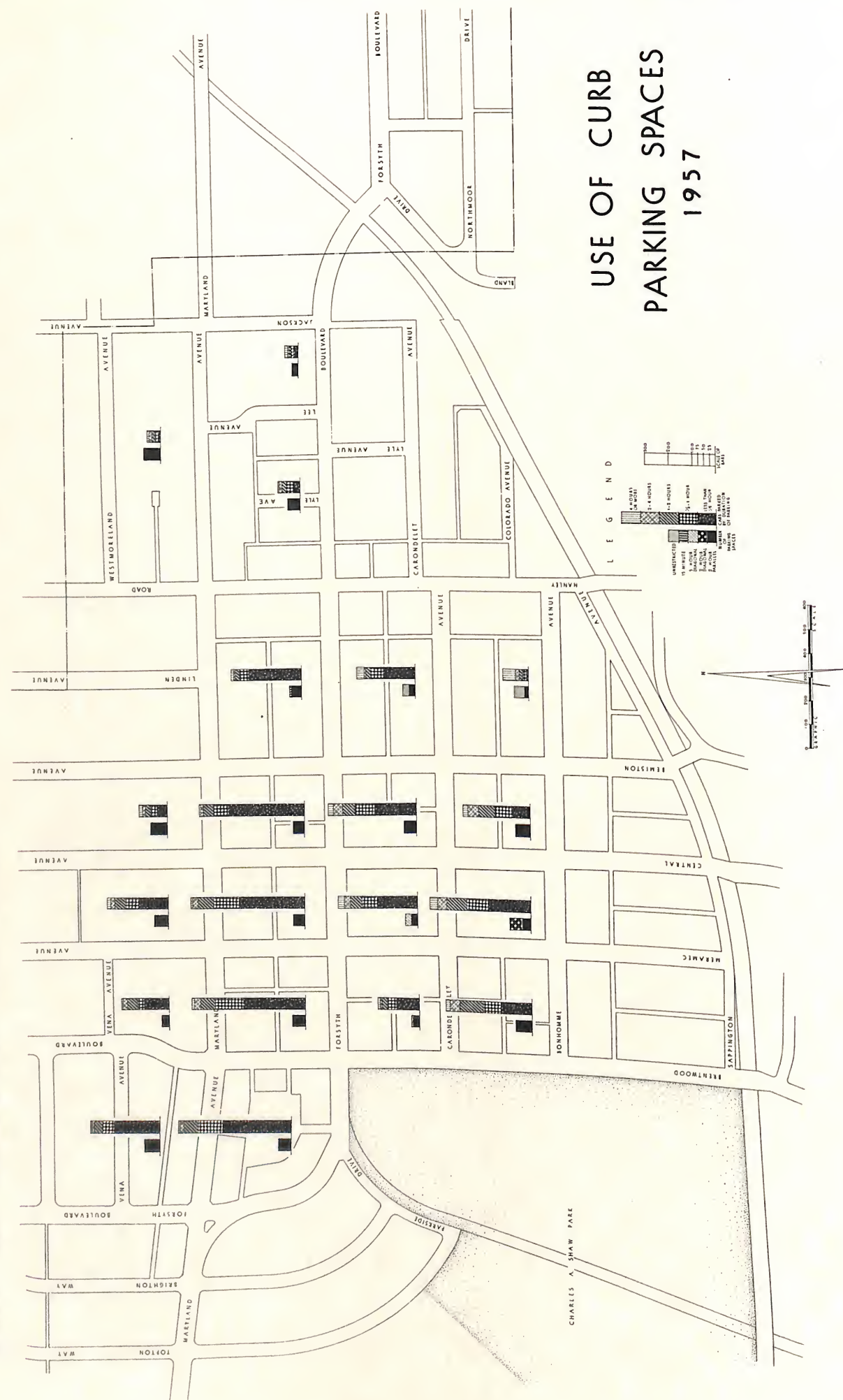
As noted in the 1947 report, more of the curb space is used for parking in Clayton than in the average business district. Except for parts of Brentwood, Hanley, Sappington and Forsyth, parking is permitted on practically all streets and even Forsyth is used for parking between Hanley and Brentwood Boulevard where the demand is greatest. However, the city has made considerable progress in revising curb parking regulations within the past year to promote a higher turnover of cars in these spaces. For example, one-hour meters have been installed along Forsyth where parking is permitted and along Brentwood, Meramec, Central and Bemiston in the blocks immediately north of Forsyth. Unrestricted spaces have been eliminated except along the west side of Brentwood south of Bonhomme and on parts of Jackson and Parkside Drive. A limit of two hours still prevails on many streets, but the frontages along Bonhomme east of Bemiston, along the east side of Parkside and on the north-south streets at the south edge of the district are all metered for 10-hour parking.

Diagonal parking is permitted around the south and west sides of the Courthouse Square and in certain blocks to its east and south. The curb setback in most of these blocks is adequate for this purpose, but some of these spaces may have to be changed to parallel parking in the future to facilitate traffic movements.

As shown in Table 4, a total of 1,826 spaces are available on streets within the district as a whole, about 500 of these along streets beyond the commercial and business zones, so that only slightly over 1,300 spaces are available for customers and patrons of the area. Some 1,295 spaces - over 70 percent - are in the metered or posted two-hour zones, and about half of the others are in the several blocks which have 10-hour parking limits. About 155 of the two-hour metered spaces consist of diagonal parking.

Off-street Facilities

Considerable improvement has been made since 1947 in off-street parking - an increase from 475 to 2,050 spaces within the 1947 survey area - but much more improvement is needed. The intensity of the parking problem has resulted in the utilization of many small spaces behind individual buildings as well as larger areas. These range in size from accommodations for only four or five cars to the extensive 848 car customer lot at the east edge of the district.



Existing off-street facilities fall mainly into two types of areas or combinations thereof - spaces for customer parking, spaces for employee parking or lots accommodating both. Customer parking lots provide an aggregate of 1,017 spaces, employee lots some 964 spaces, and facilities for a combination of both total 3,290 spaces. Most of the customer lots - 55 percent of the total - are located either east of Hanley Road or west of Brentwood.

The public parking areas consist of two lots, one holding 200 cars south of the courthouse, the other accommodating about 175 vehicles at the edge of the district abutting Sappington Avenue.

The private parking lots are generally small and scattered through the district, comprising in the aggregate only a little over 200 spaces. Commercial lots are limited to five with an aggregate capacity of 270, two of these being on West Forsyth south of its junction with Maryland, the others on Central and Carondelet.

Many of the smaller areas are too limited or too irregular in shape to be effectively used, and are not readily visible or convenient to customers and patrons of the district. Thus, except for the larger off-street areas such as those developed by the department stores, banks and a few other establishments, many of the existing facilities are not well related to the stores and offices which they serve.

While the larger off-street areas are generally well paved and marked for parking, many of the smaller lots are unimproved, or poorly marked or have rather limited access. Further, such unimproved areas have little assurance of permanency since they may be sold at any time for office or other commercial development.

Off-street facilities of all types aggregate 6,145 spaces, which, with the curb accommodations, can provide parking in the district as a whole for nearly 8,000 vehicles. Thus, existing off-street spaces amount to about 77 percent of the total.

Use of the Parking Facilities

Based on data from field surveys in the fall and winter of 1956-1957, Plate 7 was prepared to show the characteristics of curb parking and its utilization. The bar on the left shows the total number of curb parking spaces around the block indicated, the bar on the right the actual

number of cars parked between 8:00 a.m. and 6:00 p.m. in these spaces. Thus, the relative heights of the two bars represents the parking turnover.

Obviously, a very high turnover of the on-street spaces existed in all of the blocks in the core of the central business district, ranging from eight or nine cars per space in the blocks along the north side of Forsyth Boulevard to four or five cars per space between Carondelet and Bonhomme. Curb parking in the areas on either side of Forsyth to the east of Bemiston averaged about five or six to one; to the east of Hanley, however, utilization was relatively low with only one or two cars per space on the average.

Despite the two-hour parking allowance, many vehicles stayed less than one-half hour - over half of the blocks north of Forsyth experienced this condition - and except in the fringe areas, the majority were parked for less than one hour. In the blocks along Forsyth these short time parkers represented from two-thirds to three-fourths or more of the total, and even east of Hanley they comprised from one-third to one-half of total. The low turnover in the vicinity of Bonhomme and Hanley is due to the lack of parking restrictions and the large number of all-day parkers on Bonhomme and Carondelet Avenues. Parking in excess of two hours is a violation in most of the blocks. While there were few violators along Forsyth and Maryland Avenue, there were a substantial number in the blocks between Forsyth and Bonhomme.

The numbers of vehicles parking for various periods of time within the metered areas in the Clayton business district are summarized in the following table:

Time Parked	2-hour Areas		5-hour Areas	
	Number	Percent	Number	Percent
1/2 hour or less	2,578	56.5	57	47.1
From 1/2 to 1 hour	956	21.0	26	21.5
From 1 to 2 hours	643	14.2	12	9.9
From 2 to 4 hours	247	5.5	9	7.5
Four hours or more	127	2.8	17	14.0
Total	4,551	100.0	121	100.0

More than half of the parkers in the two-hour areas and almost half of those in the five-hour zones parked for less than one-half hour and over three-fourths and two-thirds respectively parked for less than one hour. Only

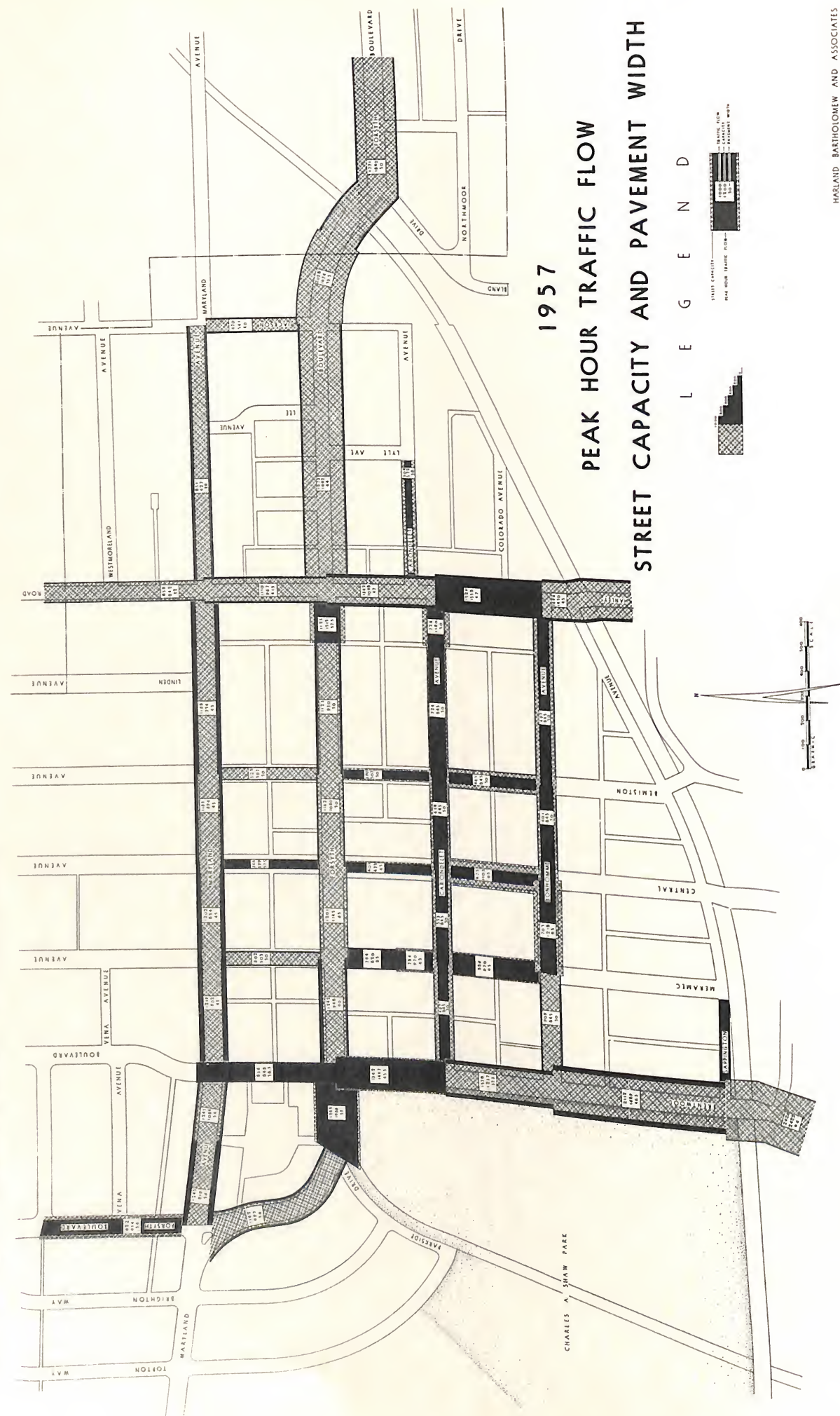
one car in seven and one in ten respectively stayed from one to two hours. These ratios indicate that the parking regulations were poorly related to the actual parking habits - the time limit should be reduced to foster an even higher turnover and to favor the short-time parkers who desire to make quick purchases and wish to park very close to their destinations. Otherwise, the latter will go to other shopping centers where such space is to be found.

Some 374 cars (8.3 percent) parked over two hours, which is a violation of the restrictions in most blocks. (Over 100 of these were all-day parkers.) This is an improvement in the conditions found in 1947 when some 291 or 15 percent of the total stayed more than two hours in the core area, but it could be reduced further by stringent enforcement of the parking law, thereby making such spaces available for the more numerous short-time parkers.

Availability of Vacant Spaces

Experience has shown that approximately 15 percent of the parking accommodations should be vacant during the peak period of average shopping day so as to minimize cruising in search of a space, which tends to create or add to the traffic congestion. The field survey in Clayton revealed that there were few or no curb spaces available during most of the day in the area west of Bemiston, the blocks along either side of Forsyth being generally 100 percent occupied during the peak hours. This indicates that the parking conditions have become quite critical in the past few years - in 1947, for example, vacant spaces in this area ranged at different periods of the day between 13 and 54 percent of the total. During the non-rush hours of the average shopping day, the only vacant spaces of any consequence were found along Maryland Avenue east of Bemiston and on the residential streets to the north which are not convenient to shops and offices and should be reserved for residents of those areas.

Investigation of the off-street spaces revealed that the conveniently located smaller lots were almost completely filled during the peak hours, although some spaces were available in areas along alleys where the accommodations were not readily accessible or were inconvenient, or could not be seen by the customers. The majority of the large lots were also well filled, ranging from an estimated 90 percent west of Brentwood to 75 to 90 percent at the east edge of the district, the lower figure applying primarily to the large Famous-Barr lot where some of the fringe spaces were unused.



Parking and Traffic

The large regional shopping centers which have developed in recent years owe their success to ready accessibility as well as to ample and convenient spaces for parking. Thus, good traffic facilities and ease of circulation within the business district itself are essential to the maintenance of a strong competitive position - in addition to much more adequate off-street parking. Since curb parking affects the street's traffic capacity, vehicular circulation and parking are interrelated in the central area.

Plate 8 shows the peak-hour traffic flow in comparison with the theoretical traffic capacity of streets in the Clayton business district. The traffic counts were made generally in the fall and early winter of 1956-1957.

All four of the principal through streets are presently over their capacities during the peak period, although Brentwood Boulevard is capable of handling a slightly larger volume where it has been widened south of Forsyth. The recent widening of much of the pavement along Brentwood has substantially increased its capacity. Maryland Avenue averages nearly 50 percent over its normal working capacity, which accounts for the congestion along this thoroughfare at certain times, and Forsyth Boulevard varies from only slightly over capacity east of Hanley Road to approximately 30 percent over capacity east of Brentwood Boulevard. Forsyth is also overloaded but not quite so acutely between Maryland and Brentwood. Traffic on Hanley Road exceeds the street's capacity except in the vicinity of Carondelet and Bonhomme where such traffic has the right-of-way over the cross streets. The current pavement widening along Hanley is a most essential improvement.

With a few exceptions, mostly north of Forsyth, other streets in the district are below their working capacities. Bonhomme is slightly over its capacity west of Meramec and the latter is only a little under its capacity from Bonhomme northward which indicates a substantial use of these two streets between Brentwood and Forsyth. The three north-south streets are either near or slightly above their working capacities between Forsyth Boulevard and Maryland.

In 1955 a special traffic survey was conducted by the city to determine the volume of local and through movements using Maryland Avenue and Forsyth Boulevard through the Clayton business district. Counts were made in the vicinity of Maryland and Gay and at Forsyth and Jackson and Maryland and Jackson Avenues by recording license plate numbers passing

each point. This survey indicated that between the hours of 7:00 a.m. and 7:00 p.m. some 11,155 vehicles passed in both directions through the west portal and some 13,854 vehicles through the combined east portals. Of these vehicles, 4,841 constituted through traffic which did not stop in the district. Thus, on the basis of the 1955 count, through traffic comprised about 43 and 35 percent respectively of the total traffic using the west and east entries. From the increase in employment within Clayton itself in the last year or two and observation of current traffic conditions, it has been estimated that these ratios have declined somewhat in the past year, but even so through traffic probably accounts for more than one-third of the total volumes on Maryland and Forsyth Boulevard.

The construction of the proposed thoroughfare on the existing Rock Island right-of-way along the south edge of the district, described later, would permit the through traffic to bypass the business area and free central business district streets for local circulation. Even with this improvement, however, and at least pending its construction, the prohibition of parking along Forsyth and Maryland and on a few other streets is desirable at periods of peak flow to expedite traffic, which accentuates the importance - in the face of the already large deficiency - of creating many more off-street parking areas.

Transit Service

The local business district is served by more transit routes than any other city within the county. The St. Louis Public Service Company operates four routes into the district, one of which is a streetcar line - the University-Clayton. The St. Louis County Transit Company also operates four bus lines into or through the business district. With the exception of the Ladue local routes, the three lines operated by the Public Service Company provide frequent service, especially during rush hours. Less frequent service is provided on the County Transit routes, but they extend through extensive portions of the county.

No data or estimates are available regarding the number of persons carried daily to and from the district by transit facilities. The routes do carry a substantial number of employees and thus afford considerable relief in parking requirements. The availability of transit service is especially helpful to the employees in the local offices and is undoubtedly a factor in encouraging their development. However, only comparatively few customers use the transit facilities. Autos are the dominant means of reaching the Clayton district, which only emphasizes the necessity of improving street and parking facilities.

St. Louis and St. Louis County have sponsored a comprehensive study of transit operation by the Metropolitan Transit Committee. The study, now in progress, is concerned not only with existing facilities and future needs, but also with plans for improving transit facilities within the city and county. It is expected that efforts will be made to develop a rapid transit system, but it is now impossible to forecast whether any such route would serve Clayton. It is obvious, however, that many years will elapse before substantial accomplishments are realized and in the meantime extensive efforts must be made to improve local parking and street facilities.

Summary of Trends, Conditions and Needs

1. Clayton has experienced rapid residential, then commercial growth and has become one of the major shopping and office centers in St. Louis County. It is also an outstanding residential community and the resulting conflicts between these two major uses must be resolved.
2. The most important current trend is the lack of new retail development and the extensive amount of new office buildings. The latter provide potential customers and increase assessed valuations, yet add to the traffic and parking problems which adversely affect the retail outlets.
3. Some of the existing retail establishments are below desirable standards and should be replaced. The major problem will be one of maintaining character and desirability of the retail center in its competition from modern regional centers such as Westroads, Northland and others.
4. The present arrangement of retail outlets leaves much to be desired since there is too much strip development. This cannot be completely corrected, but it can be improved by encouraging additional retail development in the general vicinity of the courthouse as well as along Forsyth east of Bemiston.
5. Income from commercial development is a major source of total public revenue with assessed valuation of the commercial development estimated at 25 percent of the total valuation of real property. However, this advantage is partly offset by the resulting traffic problem, encroachment upon residential areas, and possibilities of a depreciation or blight, that would injure the entire city.
6. Some 91.5 acres - exclusive of streets - are zoned for commercial and industrial use within the central district

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which is much larger than in most suburban towns, yet similar to the area within the largest regional centers. However, certain important factors must be recognized, namely (1) the local public streets occupy a substantial additional area (46.2 acres) whereas all circulation and parking within regional centers is provided within the area zoned commercially, and (2) modern shopping centers provide about three times as much area for parking as the retail floor space, while the present parking facilities in Clayton represent only about 1.1 times the retail and office floor area - in fact, it is only 3.2 times the retail floor area, exclusive of the offices.

7. Much progress has been made in providing off-street parking facilities since a 1947 study and the large majority of these have been by private rather than public enterprise. However, a basic defect of the district is the lack of convenient parking evidenced by (1) conservative estimates indicate a current need of nearly 2,300 additional local parking spaces and (2) some of the existing parking is poorly improved, lacks good access and is too far from the retail outlets - customers object to walking more than 300 feet in suburban or regional shopping centers. However, further progress is being made. Since late in 1957, the Plan Commission and Board of Aldermen have approved three special permits for off-street lots accommodating some 350 additional autos.

8. Several of the streets within and near the central area are seriously congested during rush hours. Improvement of a bypass route, and further elimination of curb parking are essential steps for relief.

9. Existing streets leading from the central business district can theoretically accommodate - during the peak hour and without congestion - about 6,000 vehicles to the north and south and 3,300 to the east and west, a total of some 9,300 vehicles in all directions combined. (This is based on elimination of peak-hour curb parking coupled with certain contemplated street improvements.)

10. Even though Clayton has better transit service than most local suburban communities, it is used by comparatively few customers. The transit study being conducted by the Metropolitan Committee should indicate methods of improving local transit service, but it will probably be many years before any substantial relief is afforded. Consequently, this study must be primarily based upon access by autos.

11. Under the existing conditions described above, no additional commercial zoning is recommended in any area near the central district. Neither should there be any relaxing of the current parking or building bulk requirements, although greater flexibility in design may well be permitted, as described later, through raising the height limits where only part of the lot is occupied and the total floor area is not considerably increased.

Estimated Future Parking Needs

Future growth of the Clayton central business district will depend (1) on the retention and strengthening of its competitive position with respect to other suburban business districts and to existing and future regional centers, and (2) on the area within this district which can be made available for commercial development and the necessary off-street parking. The district has many advantages in the fine character and attractiveness of the majority of existing stores and offices, but it has certain problems also, especially from the standpoint of traffic and parking. Because of the increasing competition from modern regional centers in St. Louis County, it is difficult to forecast with accuracy the future growth of the Clayton business district, especially since some difficulty is arising in maintaining its present position, but substantial additional construction can be expected.

Under present zoning regulations, a total floor area of about 9,365,000 square feet, needing over 50,000 parking spaces would be possible. (Based on complete utilization of the "H-1" zone to the five-story height limit and 50 percent utilization of the other zones to the three-story height limit.) However, it is incredible to consider the full use of all available land or of the maximum building heights, even apart from the many commercial structures already built, nor could the present street system even begin to accommodate the traffic which would be generated by such a large volume of parking.

From a more realistic appraisal of potential development within the areas planned for retail business and office uses (including all the land between Bonhomme and Sappington Avenues) made on the basis of available vacant and residential property, it is estimated that from 150,000 to 170,000 square feet of retail floor area and from 440,000 to 1,120,000 square feet of office space could be provided. These estimates take into consideration the areas needed on individual properties for compliance with the present off-street parking

Table 5

ESTIMATED PRESENT AND FUTURE PARKING REQUIREMENTS

Clayton Central Business District

July, 1958

	Retail Space		Parking Needed*		Office Space		Parking Needed**		Total Needed Future	Spaces Available	To Be Added Under Zoning	Total	Deficiency Future
	Existing	Future	Existing	Future	Existing	Future	Existing	Future					
Area West of Brentwood	85,400	109,000	569	727	132,700	132,700	531	531	1,258	941	79	1,020	238
Area Brentwood to Hanley	283,450	365,000	1,890	2,433	1,029,770	1,834,600	4,119	7,338	9,771	4,653	2,955	7,608	2,163
Area East of Hanley	338,950	395,000	2,260	2,633	95,790	102,700	383	411	3,044	1,863	210	2,073	971
	707,800	869,000	4,719	5,793	1,258,260	2,070,000	5,033	8,280	14,073	7,457	3,244	10,701	3,372

* @ One space for each 150 sq. ft. of floor area

** @ One space for each 250 sq. ft. of floor area

requirement of one space for each 300 square feet of new commercial floor area, the lower extremes of the ranges being based on surface parking only, the upper extremes on two subsurface levels and surface parking for office buildings and one subsurface level plus surface parking for the larger retail buildings.

While two levels of subsurface parking in addition to surface spaces would appear unlikely in all new construction, it is not unreasonable to assume that an average of two levels (including the surface parking) could be developed and that as much as 800,000 square feet of office space could be added in the district, along with 160,000 square feet of retail area. The distribution of this space in the major divisions of the district and the parking available and required are indicated in Table 5.

In appraising the future parking needs, separate criteria have been applied to the retail space requirements and those relating to the office areas. Because of the necessity for meeting the competition offered by the other large regional shopping centers such as Westroads, at least one parking space for each 150 square feet of retail floor space - or a ratio of about two to one between parking and floor area - has been assumed, which is still considerably below the ratio of three or four to one, or more, provided by new regional centers. Office requirements are a little lower, but even so, at least one space for each 250 square feet of floor area will be needed if the parking requirements of both clients or patrons and employees are to be met, and some office buildings may require a still higher ratio if their needs are to be fully satisfied.

Based on these estimates, almost 5,800 parking spaces will be needed for retail establishments alone and nearly 8,300 more for existing and future office areas, a total of slightly over 14,000 spaces in contrast with the not quite 7,500 spaces currently available on and off street. While some 3,240 spaces would be added to existing parking accommodations by compliance with the zoning requirement of one space for each 300 square feet of floor area in future buildings, based on the expected construction, this will still leave a deficiency of some 3,372 spaces to be provided by other means. Provision of the latter will require the cooperation and collaboration of property owners, merchants and other business and professional men and public officials in gradually developing such spaces in additional parking structures and off-street areas if the district is to function without congestion and compete successfully with other commercial areas.

CITY OF CLAYTON

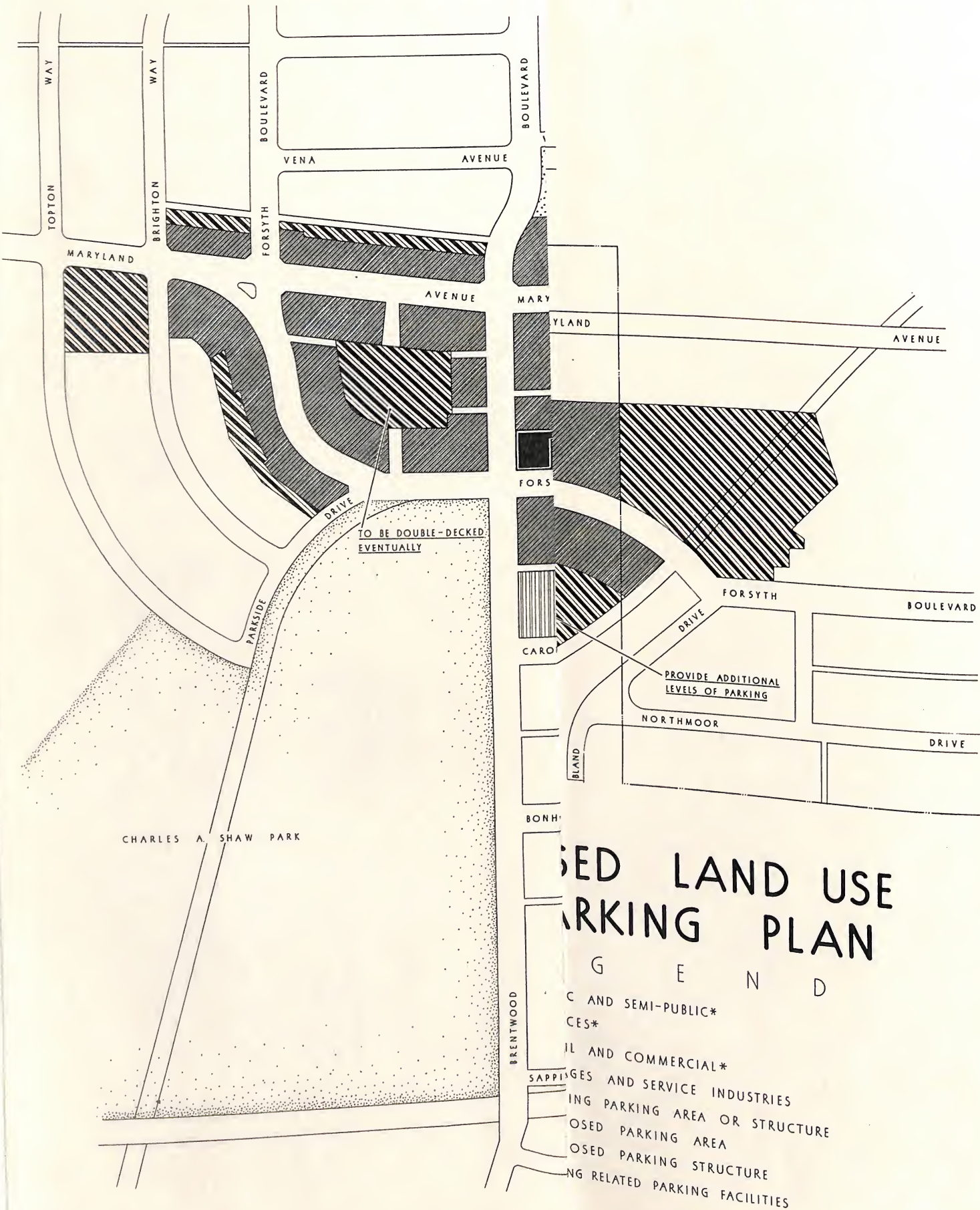
Proposed Improvements

Preceding sections have covered both the advantages and many problems confronting Clayton's business district. Adjustments and improvements are essential if the area is to continue as an important and useful portion of the city. This section is concerned with the major changes that should be made during coming years and contains recommendations for (1) arrangement of land uses, and (2) improvement of parking facilities, including curb spaces. Proposals for street improvements are discussed in detail in a later section of the report. The Proposed Land Use and Parking Plan is graphically shown on Plate 9. In addition to these improvements, it is important that new structures have a desirable character and that high standards be maintained. While these latter objectives cannot be achieved entirely by regulatory measures, they should be encouraged by an adequate and convenient arrangement of physical surroundings.

Arrangement of Land Uses

Retail Uses. While there are disadvantages in the strip type of retail shopping district that prevails along Forsyth Boulevard, little can be done now to change this basic pattern. Therefore, the plan proposes to make the most of existing conditions by consolidating, integrating and organizing all property along Forsyth into retail and related commercial development between Brighton Way on the west and the city limits on the east. A major change required to achieve this objective is the relocation of the two garages along Forsyth between the city hall and Hanley. These disrupt the continuity of the retail area and occupy space more valuable for other purposes. They could be relocated along Hanley Road south of Forsyth which frontage should logically be used for service establishments rather than retail facilities. While the grades along Forsyth present some obstacles, they are less severe than in many business centers and can be partially offset by convenient parking facilities.

That portion of the Maryland Avenue frontage now zoned for commerce west of Bemiston should likewise be used for retail development. Here again, it is desirable that the non-retail uses, such as the garages, be replaced eventually with stores and shops. Retail facilities should be continued along the north and south streets between these two major arteries and should also extend southward to Carondelet along certain portions of Meramec, Central and Bemiston. Major replacement and rebuilding are essential along portions of these streets such as the east side of Central. This is the



heart of the business district, and extensive rebuilding is justified provided adequate parking facilities are made available.

Offices. Offices should logically continue to be located in parts of the retail section, particularly over stores. However, the preponderance of office space, including new office buildings, should occupy the area along both sides of Bonhomme and Carondelet Avenues, between Hanley and Brentwood, as well as north of Sappington. Here such structures would complement the shopping district. Further, because of the lack of heavy traffic movements such as are found along Forsyth and Maryland, the area is less desirable for retail use. This is evidenced by the fact that no new stores have been erected therein although it has been commercially zoned for many years. A new hotel has been built in this area. A much smaller office district is suggested along North Meramec at the north edge of the retail area. On the basis of recent building trends and adaptability of the available area, office construction is expected to exceed new store construction in the central business district in the future.

Public Buildings. Two major areas should be continued or enlarged for public buildings. The first and most important is the courthouse area. While this disrupts the continuity of commercial uses within the center of the district, county offices and activities are very important to the further development and success of the district and it is not practicable or desirable to consider any relocation. The county is now considering erecting a new structure for courtrooms and other purposes immediately south of the remaining portion of the courthouse. They desire that the building occupy a portion of Carondelet which would require the vacating of this street between Meramec and Central. Such vacation would result in some interference with vehicular movement within the area but if satisfactory arrangements could be made whereby the city could provide a multiple-tier parking structure in Atwood Park, the two prospects should be beneficial to both the city and county. Double decking of this lot is desirable now to improve the parking situation. It is possible that the county will eventually desire to erect even more office space within the park, but even then it should be possible to maintain substantial parking facilities.

The second area contains the post office and city hall. These are satisfactorily located and can be expanded, if necessary. Additional parking could be provided south of Maryland.

Residential Areas. A substantial area along Carondelet and Colorado Avenues east of Hanley is now residentially zoned, and no change has been proposed on Plate 9. It is recognized that this property is surrounded by existing and proposed business uses, but except for several vacant lots, all of the property is still residentially used, and with a few exceptions the homes are well maintained. Rezoning of the area at the present time would tend to promote the use or reuse of individual properties on a haphazard, piecemeal basis, thereby creating an unsatisfactory environment for the remaining buildings and precluding the proper integrated development of the area as a whole.

However, the long-range use of this property would be more appropriate for nonresidential purposes. The north side of Carondelet could well be used for parking to serve the retail establishments along Forsyth, and the south side would be appropriate for some enlargement of the service area along Hanley Road, and especially for one or more office buildings - the advantages of the view and the advertising values to be gained by location along the Rock Island thoroughfare would be considerable.

In order to make any desirable reuse of the area along Carondelet practicable and possible, it will be necessary to assemble and consolidate all of the individual properties. Because of the diversity of ownership, this is difficult for a single developer or a small group, but it could be accomplished by all the property owners in the area collaborating in such a project and pooling their individual properties. It is most desirable that Clayton officials encourage private development of the area to a desirable standard. Failing action on a private or cooperative basis, consideration should be given to redevelopment of the area through the organization of some form of redevelopment agency or corporation.

Building Heights in the Central Business District

Existing buildings in Clayton do not exceed five stories in the most intensively built section between Bemiston, Brentwood, Maryland and Bonhomme, or three stories in the remainder of the central business district. Heretofore, buildings have been limited to these heights by the zoning regulations in order to prevent over-concentration of floor area and consequently of people, services and traffic in parts of the central business district to the disadvantage of the desirable development of the city and of the district as a whole.

From the standpoint of building bulk, these limits are considered sound and desirable. However, in order to provide greater flexibility in building design and construction and to encourage more open space around structures, particularly new office buildings, the revised zoning - discussed later - contains proposals to permit taller buildings where portions of the lot are left unoccupied by a structure. This would be accomplished by prescribing a basic ratio of floor area to lot area which could be increased by specified amounts related to the proportion of lot area left as open space. In effect, the proposed regulations provide a premium on openness. Since off-street parking accommodations are so essential to each establishment, these should be enforced in accordance with the total floor area provided, but a premium increase in the floor area ratio would also be permitted where the minimum parking requirement was exceeded.

Improvement of Parking Facilities

An area for parking that should be established ultimately is the area on the south side of Maryland, between the post office and Hanley. Here the Maryland frontage would be available for parking in conjunction with retail use of the Forsyth frontage. In order to preserve a good appearance across from the residential area north of Maryland, restrictions should be imposed upon the development of this parking area. A well-designed wall should be located not less than 30 feet from the south line of Maryland and the intervening space should be landscaped and maintained as a park area. Cars should be prohibited from extending above this wall. Any parking facilities along the west side of Hanley south of Maryland should also be enclosed within a wall, paralleling this north-south major street.

Another proposed parking area is north of Forsyth, between Hanley and Jackson. Previous data revealed that this area of the city east of Hanley Road contains intensive retail development (some 338,950 square feet) including some of the newest in the city. It also has very inadequate parking and approximately 780 additional spaces are needed to meet even the minimum standard.

The use of the abandoned high school site for parking facilities was given intense consideration by the Commission and its consultants. There was unanimous agreement that a parking facility, well planned, would be less objectionable from the point of view of adjacent residential property than the deteriorating school building and other possible uses. On this basis, recently the Board of Aldermen approved the use of the area for parking purposes.

These parking areas are so located as to be not only convenient to existing and future commercial development but also to form logical buffers between the commercial areas and adjacent residential property and should be so developed as to be effective as permanent barriers to further expansion of the commercial zone.

Additional Off-street Parking Facilities

It is expected that the majority of the existing off-street lots will be maintained in the future but some of these must be enlarged and supplemented to serve the retail uses. Plate 9 shows the general location of certain additional parking facilities and the following is a summary discussion thereof.

Area West of Brentwood. The existing large lot in the center of the block bounded by Forsyth, Brentwood and Maryland can and should eventually be double-decked. This will be especially needed whenever any of the vacant property is improved with stores or shops.

There is no ready solution for additional parking spaces to serve the stores on the north side of Maryland and on the west side of Forsyth south of Maryland. The area in the rear of the buildings currently offers the only possibility.

Brentwood to Hanley. Plate 5 revealed the serious shortage of parking facilities within the three blocks lying north of Forsyth between Brentwood and Bemiston. Because of the existing development, it is extremely difficult to provide adequate parking within any of these blocks but this is the heart of the district, and it is particularly important that more parking be provided. Plate 9 shows certain possibilities that would assist in relieving the shortage.

In the block west of Meramec it would be possible to utilize the space now occupied by the City Garage for a parking structure and to connect this with another structure at the northeast corner of Forsyth and Brentwood where the lower floor might be utilized for retail use. Another possibility would be to utilize elevator type of parking structures in the area occupied by the City Garage. However, the latter type is expensive to operate and customers do not particularly like such structures for parking. In the block to the east, parking structures could be developed as shown on the plan which would substantially reduce the present shortage of convenient parking facilities. Another improvement that will be of some assistance is the area on the south

side of Vena between Meramec and Brentwood. Additional parking in this part of the district could also be provided on the northwest corner of Maryland and Central by acquiring and removing the old dwellings now located thereon.

There is also a shortage of parking in the blocks south of Forsyth around the courthouse. The County Bank has a substantial parking area which might logically be improved as a multiple parking structure which would serve the entire block. Previous reference has been made to the importance of rehabilitating or redeveloping much of the block east of the courthouse and when this is done, a substantial amount of parking should be provided generally in the area shown on the plan. The improvement of Atwood with a parking structure, through an agreement between the city and county which was previously mentioned, would substantially reduce the parking shortage in this general section.

Considerable parking space now exists south of the retail development on Forsyth between Bemiston and Hanley and a new parking garage has been constructed near Bemiston. Most of the balance of this one-half block should logically be utilized for parking.

East of Hanley. The improvement of parking facilities east of Hanley was discussed earlier in this section. Many of the stores toward the eastern end of this district will benefit from the proposed parking areas north of Forsyth between Hanley and Jackson and thus should logically participate in the improvement. Further, the area in the rear of the Glick Building is adapted for a multiple level parking structure which should be erected within the near future. The possibility of using a portion of the property along Carondelet for parking purposes has been discussed in this section of the report.

Summary. It is impossible to estimate the exact number of parking spaces that could be provided under the proposed improvements since there is no assurance as to how many levels will be provided in several areas, but they are capable of accommodating about 5,000 spaces. Further, nearly 4,200 existing spaces could be retained, thus the plan would accommodate approximately 9,200 spaces in addition to those that would remain along the curbs. (There are currently about 1,300 on-street spaces but more than half of these must ultimately be eliminated to facilitate vehicular movement.) With the 3,240 additional spaces that should be provided in connection with future retail or office construction, the total spaces would approximate 13,100 spaces which is below the estimated future parking requirement. The

remaining 1,000 spaces would have to be provided by double-decking certain other surface parking areas, many of which are adaptable to this use because of the topography.

Curb Spaces

While curb parking will always be popular it can provide only a minute portion of the parking facilities needed in Clayton. It is imperative that curb parking be sacrificed whenever necessary to facilitate vehicular movement. Recommendations regarding the elimination of curb parking are contained in a later section of the master plan. Suggestions for better utilization of on-street spaces are made below.

Changes in Time Limit. The survey revealed that three-fourths of the cars parked along the curb remained less than one hour and the majority no more than 30 minutes. The changes that have been made recently in reducing the time limit on many meters within the central area to one hour should be most helpful in improving local conditions. Similar reductions may have to be extended to other meters in the future.

The presently unrestricted frontages on Carondelet and Bonhomme Avenues between Hanley and Bemiston should be limited to two-hour parking, which would insure better utilization of these spaces and remove the all-day parkers. Elsewhere in the district, the two-hour limits should be continued until additional retail or office expansion may dictate the need for extension of the one-hour limits, such as along Carondelet and along the several north-south streets extending south therefrom, between Brentwood Boulevard and Hanley.

Currently, there is serious inconvenience in certain areas near the district where all-day parking occurs in front of residential development. Likewise, the survey revealed long-time parking along Maryland east of Bemiston. All such streets should be marked with two-hour parking limits and such regulations must be strictly enforced.

Enforcement. Stringent enforcement of the parking regulations is essential to maintain a high rate of turnover and maximum use of the necessarily limited curb stalls. During the parking survey, a number of vehicles were observed to remain all day, most of these in the posted rather than metered zones. With the totally inadequate parking facilities now prevailing within the district it is essential that the most efficient use be made thereof. This is primarily the responsibility of the Police Department but the owners and officials should insist that employees not use the spaces desired

by customers. It is realized that strict enforcement of traffic regulations is not popular in suburban communities, but Clayton is now fully grown and the problems are such that they can be corrected only by sound and strict measures. Enforcement of restrictions at the edge of the district is desirable to protect adjoining residential areas, and will become more and more important as traffic and parking increase. Practically all of the commercial frontages are now metered, which facilitates parking enforcement, but meters should be extended along the several presently unrestricted blocks where parking limits have been suggested.

Recommended Parking Policies and Procedures

The many off-street parking facilities that must be provided to serve the main business district will necessarily involve substantial expenditures. The costs will primarily result from the high values of property within, or near, the central area. This section is concerned with (1) the recommended basic policies of responsibility for developing and financing the essential facilities, (2) a brief discussion of probable expenditures, and (3) proposed steps for initiating the program.

Policies of Responsibility

The Clayton business district is in competition with many modern regional shopping centers where parking is provided by the developer and is reflected in the tenants' rents. It must be realized, however, that such developments are on land purchased at far lower costs than the prevailing prices in Clayton. Further, the parking spaces are much more conveniently related to the retail outlets than is possible in the Clayton area. Property owners and tenants have a major responsibility in providing off-street parking and some have done so in Clayton.

The officials and citizens should likewise have a definite interest in assuring that adequate off-street parking is available. Not only is a major portion of the tax base dependent on the stores and offices but the residential districts of the entire city would also be adversely affected by any deterioration of the business district. Obviously, all affected interests must make definite efforts to improve local parking conditions. Following are recommendations regarding major responsibilities of the several interests:

1. The establishment of new off-street parking facilities by private interests should be encouraged where these areas conform to the locations and standards of the proposed parking program. The several new parking lots already authorized or under consideration for use under special permits meet desirable standards of development, are well located for service and will help to reduce the existing parking deficiency and city officials and property owners should cooperate in permitting the development of others to the same high standard.

2. While several office buildings now have inadequate parking, there is a definite trend for owners of new office structures to provide needed parking facilities. This is a sound and reasonable policy for all future office buildings which will be furthered by the zoning regulations. Existing deficiencies should be overcome by gradual establishment of the additional off-street parking accommodations in the office building area. Further, since the zoning requirement cannot be made completely adequate to supply all of the spaces needed in every instance, development of the areas designated on Plate 9 should be carried out to meet the smaller but nevertheless real deficiencies that may accompany new construction.

3. A recent revision of the zoning ordinance requires that any new or remodeled commercial development must provide some off-street parking. The required amount is undoubtedly insufficient in many instances and the owners and tenants of the retail outlets should be responsible for providing their actually needed, as well as required, parking spaces. Many have done this and others have indicated the desire to do so, but have experienced some difficulty in acquiring the necessary area. The areas proposed for parking on Plate 9 should facilitate this objective, especially east of Bemiston. The city should encourage owners of existing stores to extend their existing parking facilities, which in some areas such as that west of Brentwood, could be accomplished by construction of multi-level facilities.

4. The provision of parking to serve the central retail outlets between Bemiston and Brentwood presents the major difficulty, but it also constitutes the greatest need. One solution would consist of the assembling and rebuilding of large tracts conforming to modern standards and providing adequate customer parking by private enterprise. This should be encouraged by city officials, but it cannot be relied upon as the sole solution. The city and property owners should cooperate in developing parking structures in this area. The city should take the initiative in assembling the land,

using condemnation where necessary for its acquisition, and in organizing support and action by the property owners. Funds for this purpose will be supplied from parking meter revenue and the first use of such funds should be in this critical central area. Legislation authorizing the city to assess the costs of such projects against the benefited property would facilitate progress, but until this is possible, the real progress will be made in securing the interest and support of property owners.

A new, privately-owned parking garage has been erected in Clayton and it is possible that others will follow. However, there is little prospect that the parking problem within the Bemiston-Brentwood area will be solved by this method. Nevertheless, parkers can be expected to pay for such conveniences and the store owners can assist by validating the tickets of their customers.

5. The city should also help in providing facilities for all-day parkers. This has been the city's major activity in the past as evidenced by the lot south of the courthouse and the new Sappington lot, and is not currently as critical as the provision of parking accommodations for customers and patrons of the district. However, much of the Sappington lot will be absorbed by the bypass highway and, unless a parking structure can be erected in Atwood Park, public assistance will be needed later in establishing new all-day parking areas, particularly since such lots seldom prove profitable for private enterprise on high valued land such as that in Clayton. It would be entirely logical for the owners of stores and offices to participate in such improvements on the basis of the number of employees and their present deficiencies in parking requirements. Here again, legislation authorizing the city to assess costs against the benefited property would facilitate progress. Practically all establishments would benefit thereby by having the more convenient spaces available for customers.

6. Another major responsibility of the city is to insure the most effective use of the limited curb facilities through strict enforcement of parking regulations. This includes installation of additional meters, shorter time limits in some locations, and also elimination of parking along certain streets during peak periods, all of which were discussed in the immediately preceding section under "Curb Spaces".

Method of Financing Parking Facilities

The City of Clayton has an annual revenue from street meters and city-owned lots of approximately \$100,000. This income should be allocated to the planning, acquisition and maintenance of additional off-street facilities. All expense for meter and lot maintenance, policing, coin collection and accounting are legitimate expenses to be borne by meter revenues and should be so budgeted. It is the opinion of the Commission that the net revenue from parking should be devoted to solving the parking problem. This, in fact, has become standard practice in well-run modern communities. Had this sound practice been followed in the past, Clayton would not now be confronted with the critical parking problem, which demands forthright action if a solution is not to be further delayed. If the recommendation is followed, an increase in the property tax rate might, of course, be necessary to offset the loss of parking revenues from general municipal funds. This is only facing up to the realities of our situation if Clayton is to maintain its sound business district and thus maintain its favorable tax base for municipal and school revenues.

Present income from parking meters and lots will support the issuance of approximately \$850,000 in parking revenue bonds with no consideration given to the income potential of the proposed facilities. It is clear, therefore, that with proper planning, the financial solution of our parking problem is at hand and will present no hardship if Clayton will finance its general operating budget out of general revenue and apply parking revenue to the solution of this problem from which these revenues arise.

To expedite the provision of off-street parking facilities the Board of Aldermen has dedicated net parking revenue to finance additional parking facilities. The Commission believes that substantial parking facilities can be financed by the issuance of parking revenue bonds without consideration of the income potential of the new facilities. A financial and engineering study is being considered to program the most feasible specific parking facilities and provide the necessary basis for the financing of the project.

Suggested Steps to Consummate Proposed Parking Program

Persistent action by city officials will be required to achieve the many parking and traffic improvements now needed. Changing events may require different approaches

and timing in the various steps, but following is a summary of the actions by the Board of Aldermen that now appear most important:

1. Study and approve a master plan so that there is an official goal and program.
2. Issue permits for privately owned and operated parking lots whenever they conform to the location and standards of the recommended program.
3. Change the curb parking regulations in accordance with the recommendations of the program. This includes prohibition of parking along the north curb of both Maryland and Forsyth during the evening rush hour.
4. Maintain a strict enforcement program of curb parking including the marking of tires so as to insure conformance with the time limits.
5. Begin the development of proposed additional off-street parking facilities. This will require a financial analysis of the specific projects to be undertaken, including cost estimates of acquisition and improvement, operation and maintenance as well as estimates of the expected revenue. Financing of the facilities should be supported by current parking meter revenues, as recommended hereinbefore, but revenue from the facility itself should help to amortize the revenue bonds. Property owners benefited by the specific improvement should also collaborate with the city in helping to finance individual projects.

MAJOR STREETS

Introduction and Summary

The object of a system of major streets is to provide traffic ways in the proper location and of sufficient capacity to meet traffic demands consistent with appropriate protection of good residential streets. Most traffic can then be confined to these major streets so that minor streets can be protected from the adverse effects of heavy traffic and thus, all vehicular flow can be more efficiently and effectively controlled.

The major street plan should determine what streets are needed to move present and future traffic and relate the function and importance of each street to all other streets so that public money for improvements may be expended for first things first. At the same time, the plan should recognize the relationship between an immediate improvement and an improvement planned for the more distant future.

A study of existing conditions reveals certain improvements which are needed immediately. An inventory of conditions on all heavily traveled streets in Clayton, with particular attention to traffic control at intersections, indicates near capacity use at many locations and serious traffic congestion at others. Further, the conclusion is inescapable that street intersections, rather than pavement widths between intersections, present Clayton's most serious immediate traffic problem.

In order to evaluate present and future traffic demands in Clayton, a "multiple screen line" analysis was used, the year 1980 being selected as the future date. The details of this inventory and analysis are described later. The conclusions are summarized in the following:

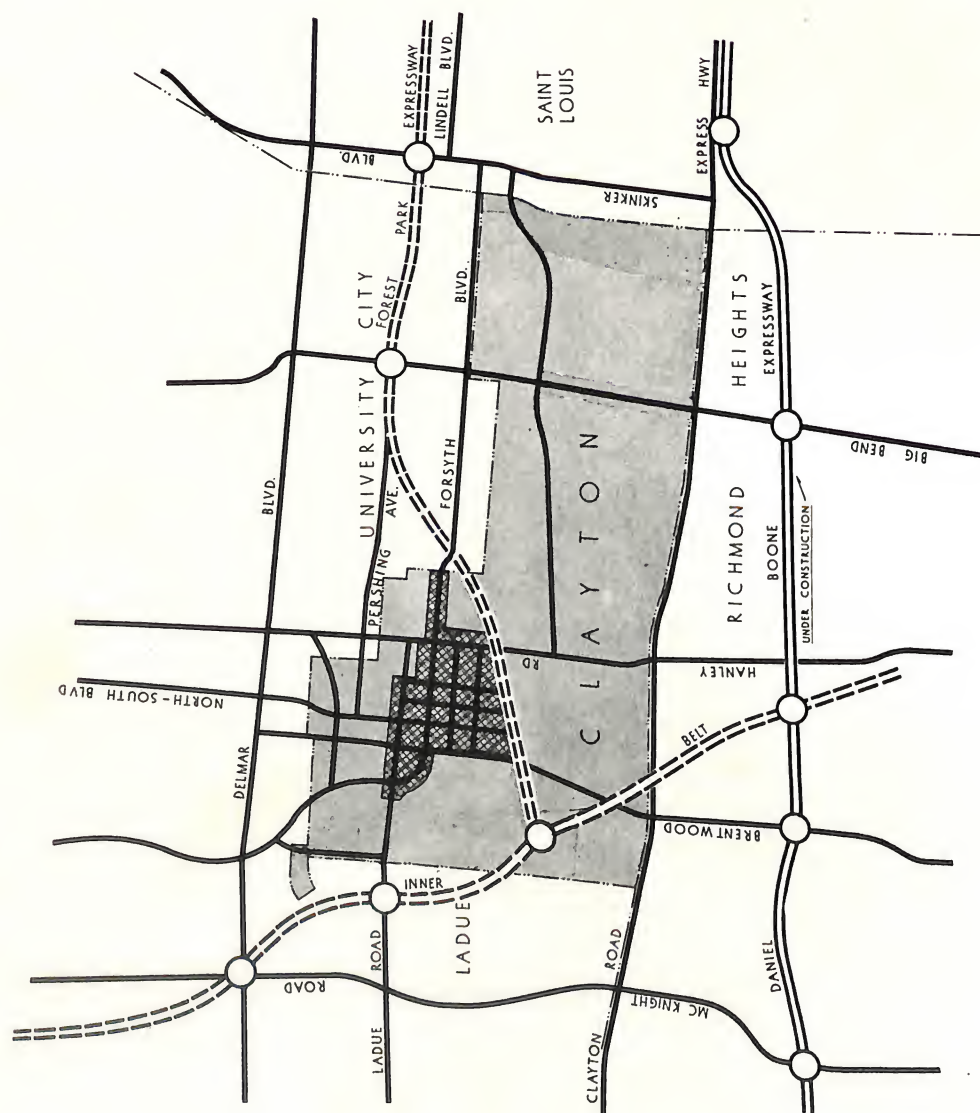
Streets on existing rights-of-way in Clayton will be adequate to meet 1980 traffic demands if and only if:

1. North-south and east-west bypass routes of high capacity are constructed around the entire Clayton community. The east-west bypass (TR-40) is expected to be completed in the near future and preliminary studies have been prepared for the north-south route, the Innerbelt Expressway.

2. A bypass route designed to attract through traffic primarily is constructed around the Clayton central business district.

GEOGRAPHIC LOCATION

PLATE 10



L E G E N D

- EXISTING MAJOR STREETS
- - - PROPOSED MAJOR STREETS
- == EXISTING EXPRESSWAY
- === PROPOSED EXPRESSWAY
- EXISTING OR PROPOSED INTERCHANGE
- ▨ CENTRAL BUSINESS DISTRICT

MILLARD BATHOLOMEW AND ASSOCIATES
CITY PLANNING CIVIL ENGINEER LANDSCAPE ARCHITECT
ST. LOUIS, MISSOURI
NOV 1937

3. Certain improvements are made to increase the capacities of existing streets, such as

a. Selective removal and restriction of certain on-street parking, with provision for additional off-street parking.

b. Increase in intersection capacities by signalization wherever serious delays are encountered, by provision of separate left-turn lanes, and in a few instances, by grade separations.

c. Pavement widenings.

The studies which resulted in these conclusions, the basic concepts upon which major street and traffic planning were based, and the plan for accomplishing the objectives outlined above are all described in the sections which follow.

Existing Conditions and Problems

The location of Clayton with respect to the City of St. Louis and the St. Louis metropolitan area is shown on Plate 10. Clayton is located almost due west of the central business district of St. Louis and practically at the geographic center of the St. Louis County urbanized area. This location places the city in the path of much intra-urban traffic in addition to that generated by Clayton itself.

The general arrangement of existing and proposed streets in and around the city is also shown on Plate 10.

In the eastern part of Clayton two east-west streets, Clayton Road and Forsyth Boulevard, form the approximate northern and southern limits of the city. Only Clayton Road is continuous from east to west limits, although Forsyth links with Ladue Road to form a fairly continuous artery. There are only two continuous north-south streets, Big Bend and Hanley Roads. Brentwood Boulevard is practically continuous but ends in northwest Clayton at Kingsbury Boulevard.

Clayton contains no unplatted and undeveloped area but gradual rebuilding and redevelopment is expected to occur. Many residential streets are properly curving and discontinuous to discourage through traffic. No parallel streets exist in Clayton which could be used to relieve Clayton Road or Big Bend Road.

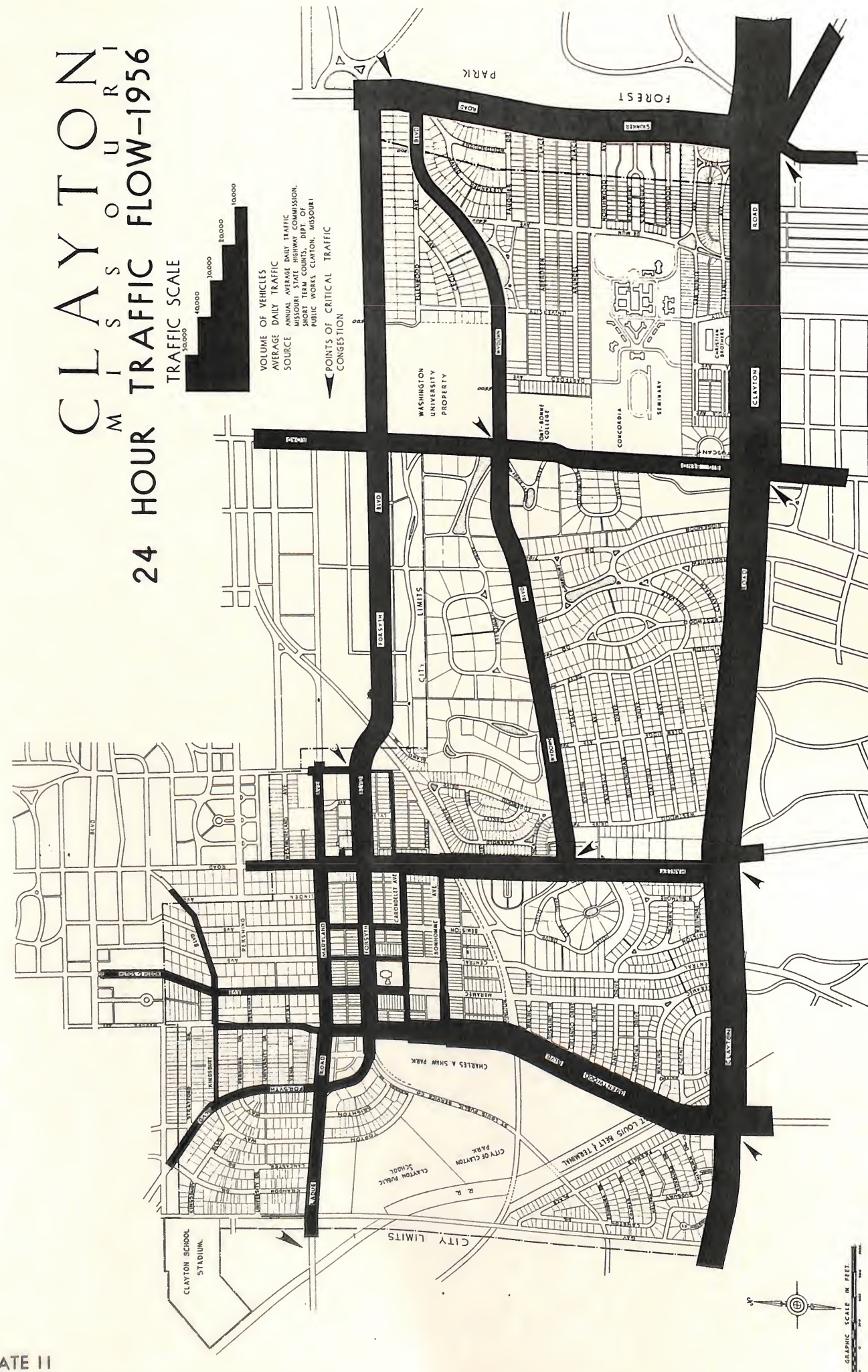
CLAYTON MISSOURI 24 HOUR TRAFFIC FLOW-1956

TRAFFIC SCALE



VOLUME OF VEHICLES
AVERAGE DAILY TRAFFIC
SOURCE: MISSOURI STATE HIGHWAY COMMISSION
SHORT TERM COUNTS, DEPT. OF
PUBLIC WORKS, CLAYTON, MISSOURI

POINTS OF CRITICAL TRAFFIC CONGESTION



Within the central business district, streets follow the conventional rectangular pattern. There are no circumferential or bypass routes. Through traffic (with no origin or destination in the central business district) must pass through the district on Brentwood or Hanley and on Forsyth or Maryland.

Inventory of Existing Street Conditions

Information concerning the right-of-way and pavement widths of streets was obtained from block plats, from plans in the office of the Director of Public Works and from measurements in the field. The number of moving lanes, number of parking lanes and certain details of pavement construction were recorded from field observation.

Traffic Flow - 1956

Plate 11 shows two-directional, 24-hour traffic volumes for 1956, the width of band indicating the average daily traffic (total traffic recorded for a particular period divided by the number of days represented by the count) along the principal streets. This information was obtained from counts made during 1956 by the Missouri State Highway Commission, supplemented in a few instances by short-term counts made by the Clayton Department of Public Works. The drawing should be considered as a general indication of traffic flow since minor variations in traffic volume from block to block are not shown. For example, the band indicating traffic volume on Clayton Road between Big Bend and Hanley was determined from a single counting station located near the intersection of Somerset Avenue and Clayton Road.

In Clayton, the highest 24-hour volumes were observed along Clayton Road. The most heavily traveled portion of this important east-west artery lies between Skinker Road in the City of St. Louis and Big Bend Road in Clayton, where the average traffic volumes exceeded 41,500 vehicles in a 24-hour period. Volumes decreased gradually to the west as vehicles dispersed to destinations north and south of Clayton Road. West of Brentwood, the 24-hour volume on Clayton Road was approximately 21,000 vehicles. Brentwood Boulevard north of Clayton Road also carried heavy traffic with an average 24-hour volume of approximately 23,000 vehicles. Other high volume streets include Hanley and Big Bend Roads and Forsyth and Wydown Boulevards.

The information on Plate 11 represents practically all of the available traffic data for Clayton. This is reasonably adequate for preparation of a major street plan, even

though additional data would be required for detailed and comprehensive traffic engineering studies. The Metropolitan Area Transit Survey now underway under the direction of W. C. Gilman & Company, Engineers, is expected to provide data on traffic origins and destinations which will prove helpful in future planning, but this data has not yet been released.

Short term counts and continuing observations of both the consultant and the Department of Public Works reveal several important additional facts about Clayton traffic. These are as follows:

1. Traffic volumes are higher in the evening peak hour than in the morning peak hour by about 10 percent. Hours of driving to work are spaced over a longer period than hours of returning home. Highest traffic densities occur between 5:00 and 5:15 p.m.

2. In the central business district peak-hour flows are about equal in east-west and north-south directions. In that area the westward afternoon flow from downtown St. Louis is not so predominant as might be expected.

3. On Clayton Road the westward afternoon rush out of St. Louis is more predominant. On Brentwood Boulevard northbound traffic is predominant at Brentwood and Forsyth but the directional flows are fairly even at Brentwood and Clayton.

4. High peak-hour volumes may be largely attributed to discharge of employees of Clayton offices. This is substantiated by the comparatively early peak hour, timed approximately with time of closing of Clayton offices but too early for the bulk of downtown St. Louis employees to have reached the city.

5. Peak-hour traffic circulates on most of the streets within the business district. There are many turning movements.

6. As noted hereinbefore, in 1955, 43 percent of all traffic using the west portal of the central business district (Maryland at Gay Avenue) and 35 percent of all traffic using the east portals (Forsyth and Maryland at Jackson) was through traffic which did not stop in the district. Through

traffic probably still accounts for more than one-third of the total daily volumes on Maryland Avenue and Forsyth Boulevard. The percentage declines during the afternoon shopping period and increases during the evening peak hour.

Plate 11 also indicates by arrowheads a number of points of critical traffic congestion - points where considerable numbers of vehicles are delayed for substantial intervals of time, resulting not only in long lines of standing cars, but in irritation to the motorists. Most notable of these is the intersection of Clayton and Hanley Roads but similar, if less acute, conditions are found at other major traffic crossings on Clayton Road, as well as at other points on Hanley Road, Forsyth Boulevard and on Ladue Road immediately west of the city.

Several of these locations are congested in a particularly irritating way because of the lack of proper traffic controls. Formerly, one of the worst intersections was Clayton and Hanley but this has recently been signalized. The jog in Hanley at this intersection adds greatly to the problem.

Present Traffic Control

There is only one street in Clayton where there have been established adequate traffic controls - Forsyth Boulevard. Here electric traffic signals have been installed at each major intersection from Jackson to Maryland. These signals each provide a left-turn phase, are well timed individually to meet peak traffic flows at the controlled intersection, and are all connected to a master controller so that they may be coordinated with each other.

Traffic on Clayton Road is controlled by electric traffic signals at the major intersections with DeMun, Big Bend, Hanley, and Brentwood. These signalized intersections handle large volumes of traffic during peak hours. The congestion which occurs daily is not caused by poorly timed signals but is the result of overloading of the intersection which cannot be substantially relieved by traffic signals of any type.

Elsewhere in Clayton, traffic control is left for the most part to the "four-way stop" and with new "yield right-of-way" signs.

On-street Parking

Sooner or later every community must recognize that the purpose of the street is to move traffic. As traffic density increases, a point is reached beyond which the traffic conflicts caused by curb parking can no longer be tolerated. Further, traffic volumes frequently develop to such a degree that the curb space is itself needed for moving traffic. While there is a critical need for additional space for parking in its central business district, Clayton is also confronted with the problem of improving traffic movement. One of the most effective and least expensive means of beginning a comprehensive traffic improvement program is to remove parking from the streets in critical blocks of the business district and its approaches.

As described in the section upon the central business district, curb parking is permitted on some part of practically every block therein. Parking meters are in operation throughout the business day on both sides of the two most heavily traveled and congested east-west streets which pass through the center of the district, Maryland and Forsyth.

Outside of the central area, parking on both sides of Forsyth Boulevard causes considerable obstruction to moving traffic in the vicinity of Washington University, particularly at peak hours, but recently parking prohibitions between 4:00 and 6:00 p.m. have been posted along the south side of the campus. Specific instances where curb parking should be restricted or eliminated are discussed later.

Off-street Parking

The lack of sufficient off-street spaces causes congestion on the streets by forcing the continued use of curb parking and results in much cruising in search of a parking space of any kind. The faster these cruising vehicles are removed from the traffic stream, the faster the traffic lane becomes available for other cars. Streets are thus used more efficiently so that less pavement width is required to handle given vehicular movements.

Off-street parking facilities may also cause traffic difficulties and place additional demands on the street system. The existence of a very large, heavily used block of off-street parking concentrates traffic on approaches to it. If the entrances and exits to an off-street parking

facility are poorly designed and located, traffic conflicts are created on the surrounding streets. Ideal conditions of access to an off-street parking facility are often difficult to attain.

Traffic conflicts are evident in the Clayton area both from lack of, and from existence of, off-street parking. Slowly cruising vehicles searching for parking space are particularly evident during the early afternoon shopping peak. Conflicts at entrances to parking lots can be observed at numerous locations. One of these is at the entrances to the Bettendorf's parking lot at Clayton and Hanley Roads. The Famous-Barr parking lot also causes some conflict and caused installation of a pedestrian signal to permit crossing of Forsyth near the entrance. There are several instances where left-turns into off-street parking facilities cause traffic delays. Among these are Boyd's lot on Forsyth west of Bemiston and the Medical Building lot at the southwest corner of Central and Maryland.

Present Street Capacity

The capacity of a street or highway to handle traffic depends on its width, the number of moving lanes, the proportions of automobiles, trucks, buses and commercial vehicles, the character and extent of traffic control (including the timing of signals) and even on local driver habits. The practical capacity of a trafficway is the maximum number of vehicles that can pass a given point thereon during one hour without experiencing any unreasonable amount of delay, hazard or restriction of the driver's freedom to maneuver under the prevailing roadway and traffic conditions. This is in contrast with the possible or absolute capacity of the intersection, which is the maximum number of vehicles which can actually be accommodated during the period under prevailing conditions, irrespective of delays, inconvenience, waiting through several changes of traffic signals, or other difficulties which may be experienced by individual motorists. When the practical capacity is exceeded, congestion appears, backlogs of waiting vehicles accumulate, and traffic moves haltingly rather than smoothly over the street.

The practical capacity of roadways (i.e. pavements) in Clayton is generally adequate to meet existing traffic demands. As these demands increase, there is considerable opportunity for corresponding improvements in the prevailing conditions, such as the removal of parking and improvement of traffic lane marking. In instances where insufficient capacity still exists after the best use is made of the existing pavement, widening will be required which can be accomplished in many instances within the existing rights-of-way. Recent examples of important pavement widenings are along both Hanley and Brentwood.

As noted before, it is the capacity of the various major intersections rather than the roadways themselves which will largely determine the ultimate capacity of the major street system. In addition to the factors affecting street capacity, as such, the volume of traffic through the intersection is influenced by signal timing, the number and types of turning movements, pedestrian volumes and the design of the intersection and its approaches, including the location of bus loading zones, filling station or parking lot entrances, et cetera. Some improvements, such as the removal of parking or relocation of bus loading, can be easily accomplished; others are more difficult and expensive. At unsignalized major street intersections, the installation of signals is required to increase capacity, the timing to favor the heavier traffic movements. Separate left-turn lanes must be added at a number of the more heavily traveled intersections, which in some instances will require pavement widening. A grade separation is the ultimate approach to increase of intersection capacity. While no intersection approach in Clayton is used to its full possible capacity, the approaches to the intersections of Clayton Road with Big Bend, Hanley, and Brentwood are used beyond their practical capacity during the evening peak.

Summary of Current Problems

The foregoing discussion of existing conditions leads to the following summary of current street and traffic problems.

1. Geographic location requires that Clayton streets carry heavy volumes of through traffic in addition to traffic generated in the city.
2. The general arrangement of Clayton's existing streets does not lend itself to a simple rerouting of traffic to relieve congested arteries.
3. Traffic control in Clayton needs much immediate attention. Additional traffic signals and selective channelizations are required.
4. Curb parking on heavily traveled streets increases congestion unnecessarily.
5. Lack of off-street parking further congests streets by encouraging cruising in search of parking space.
6. Roadway widths between intersections are generally adequate to handle existing traffic demands. Congestion occurs principally at intersections, indicating the points where corrective measures should begin.

Unless these problems are vigorously attacked, Clayton cannot hope to maintain its pre-eminence over competing business centers, both existing and future. When coupled with future traffic demands, this need for action becomes even more important. Action only after intolerable congestion occurs will not suffice.

Future Traffic Demands

Traffic increases in metropolitan St. Louis in general will be determined by (1) the size of the future population, (2) the number of vehicles in relation to this population, and (3) vehicle usage, which is gradually increasing relatively. While Clayton is now almost completely developed, the city's geographic location is such that future traffic volumes on local streets will continue to grow steadily, reflecting the traffic increases which occur in the area as a whole.

Relation to Future Development in Clayton

The central geographic location of Clayton within the metropolitan area, its position as the seat of government of a large, extensively urbanized county and the existence of one of the largest and most attractive suburban shopping and business centers in the county are all factors which, at first sight, suggest tremendous possibilities for growth.

However, as noted in the previous section, even though the area zoned for the central business district is much larger than normally found in suburban communities of comparable size, only about 1.2 million square feet of additional floor area can be provided on available vacant and residential property within these zones, and it is not desirable to enlarge the business zones or to permit taller structures.

Greater concentration of people and activities would require an effective mass transportation system or facilities for vehicular access and storage far beyond the physical and economic ability of the city and outside the realm of economic feasibility to any developer. An effective mass transit system does not exist and is not likely to develop since far larger centers are having difficulty securing adequate transit facilities.

Too intensive developments in other cities in the past have brought with them ills and inefficiencies which have created a huge national problem. With the passage of a

zoning ordinance limiting the height or bulk of buildings and the intensity of development in the central business district, Clayton has wisely decided against any attempt to drastically change the city's existing fine character.

The residential portions of Clayton are almost fully developed, and there is no reason to permit any substantial increase in population density. Therefore, in estimating future traffic generated in the city itself, the traffic that will be generated by the central business district is the primary consideration.

All conflicting influences considered, it appears most logical for the purpose of traffic projections into the next 20 to 25 years, to apply the same increase factors to Clayton as would be applied to the City of St. Louis and St. Louis County as a whole. If anything, traffic estimation on this basis will probably prove to be conservative if Clayton busies itself with the removal of obstacles to realizing its full potential.

Multiple Screen Line Analysis

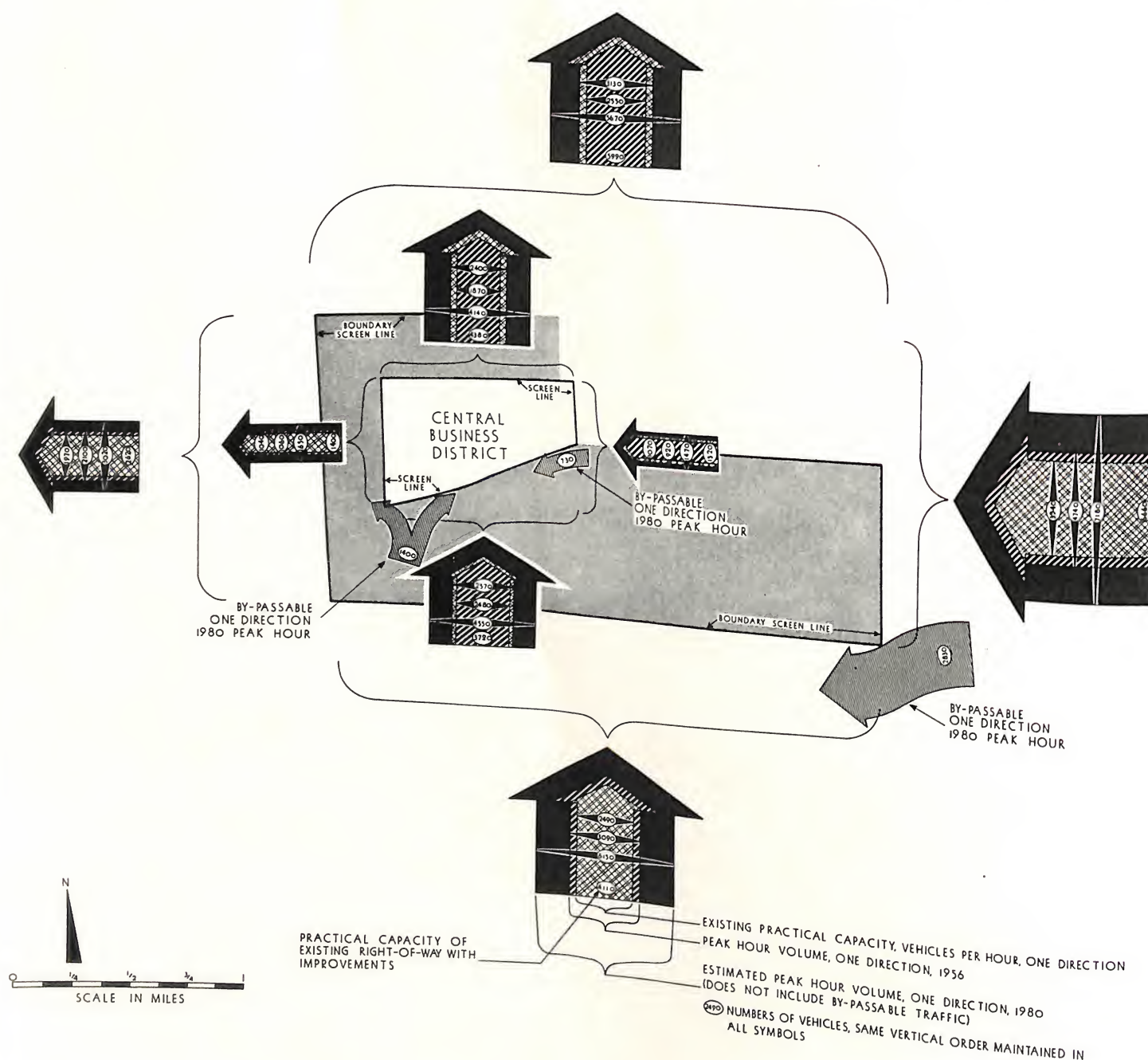
In analyzing the major traffic movements and conditions in Clayton, the city was considered from the standpoint of two separate "screen lines" or zones, the first approximately coterminous with the present city limits, the second around the central business district. The practical capacities of the principal existing streets were computed for the points where they crossed these screen lines. Existing traffic flows shown on Plate 11 were scaled at the point where the streets crossed the screen lines. Available 24-hour volumes and some available two-directional peak-hour volumes were reduced to one-directional peak-hour volumes. Two-directional peak-hour counts show that peak-hour volumes are approximately 11 percent of 24-hour volumes for east-west traffic and nine percent for north-south traffic. One-directional peak-hour traffic was observed to be approximately 60 percent of the two-directional peak-hour flow.

The one-directional peak-hour volumes and the computed practical street capacities were summarized for the north, east, south, and west sides of the city limits and central business district screen lines. When converted to two-directional movement, these capacities are generally in agreement with the two-directional capacities shown for streets in the central business district on Plate 8, the few changes therein being the result either of changes in the prevailing conditions or re-evaluation of the effect of certain conditions, such as changes in signal timing or driver habits in making turning movements.

ARTIC DEMAND AND CAPACITY



TRAFFIC DEMAND AND CAPACITY



HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
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A graphical summary of street capacities and peak-hour volumes at the screen lines is shown on Plate 12. Widths of the arrows and of the bands within these arrows show 1956 peak-hour flow, existing practical street capacity and estimated peak-hour flow in 1980. The method used in estimating 1980 peak-hour volumes is based on increases in population, vehicles per capita and vehicular usage and is described in the following.

Based upon estimates made by the Metropolitan St. Louis Survey and the St. Louis County Planning Commission, the City of St. Louis is expected to decrease slightly from its present 850,000 to about 790,000 by 1980, the county to grow from 590,000 to 1,090,000. Thus, an over-all increase from 1,440,000 to 1,880,000 or 131 percent is expected. Total motor vehicle registration in the city and county grew from 367,291 in 1950 to 453,507 in 1956 - a gain of 25 percent. Projecting this increase as an average into the future results in an estimate of approximately 1,000,000 cars and trucks in St. Louis and St. Louis County in 1980. On a per capita basis, this would mean an increase from the current .315 to .532 vehicles per person, or an aggregate gain of 69 percent. A nationwide study of miles traveled and gallons of fuel consumed has indicated for the same period a vehicle usage increase of about 10 percent. The combined effect of these three factors ($1.31 \times 1.69 \times 1.10$) indicates a total traffic increase factor of 2.4, or 240 percent within the next 24 years.

Thus, if all existing street conditions remained the same, 1980 traffic demand is estimated to be 2.4 times 1956 traffic volumes. This increase factor of 2.4 was applied to all 1956 volumes at screen lines to produce the values for 1980 traffic demands summarized on Plate 12. Converted to terms of moving lanes of traffic, these projected traffic demands give an estimate of the number and type of major streets which will be required.

The simple basic fact to be drawn from the plate is that existing streets will be seriously overcrowded unless a vigorous program of street and traffic improvements is undertaken. The remainder of this report is concerned with formulation of a plan for major streets which can form the basis for this improvement program.

General Requirements to Meet Future Traffic Demands

Since the estimated 1980 traffic demands exceed the present street capacity, additional traffic capacity must be obtained. Purchase of additional street right-of-way

of any type in Clayton would be very expensive. Widening of existing rights-of-way would require the taking or moving of buildings in commercial areas and would reduce the front yards, property values and general amenities in residential areas. Acquisition of new right-of-way on new alignments would require the purchase of many buildings in fully-developed Clayton.

Additional traffic capacity might be created by the utilization of additional minor streets. For example, Central or Meramec Avenue could be extended and connected across the Rock Island right-of-way to provide additional entries to the central business district, and other minor streets might be used in a few other areas. However, the opening up of such residential streets to traffic would be far more costly to the community in its adverse effect on residential values and property than would be gained from the standpoint of traffic. These streets should be protected. The opening of new major streets through residential sections, therefore, is not only not recommended but the city should be militant in protecting and conserving these fine residential areas.

If the purpose of a system of major streets is to be accomplished, the bulk of traffic should be confined to as few streets as possible. The investigation was thus directed to improvements which might be accomplished within the rights-of-way of those existing streets which now carry the bulk of Clayton traffic. These improvements consist of pavement widening, signalization, removal of parking and the other measures discussed earlier in connection with capacity.

Summarized along screen lines, the practical capacity with such improvements is indicated at the bottom of the large arrows on Plate 12. On every side except the north of both the boundary screen line and the central business district screen line the estimated 1980 traffic demand exceeds the practical street capacity available on existing rights-of-way. This means that additional right-of-way must be provided if future traffic demands are to be met.

So far as Clayton is concerned it would be most logical to provide these needed traffic lanes in such a way as to keep traffic out of areas where it has no need or desire to be, thus freeing existing street capacity for those vehicles having business there. Thus, the possibility of bypass routes is immediately suggested. If traffic having no origin or destination in any part of Clayton could be channeled around the whole city, then that much more street capacity would be made available to those vehicles which do

have origin or destination in Clayton. Similarly, if traffic passing through the central business district, but having no desire to stop there, could be given an alternate route, then more street capacity would be available to the shoppers and clients which Clayton wants to attract to its stores and offices.

Proposed Major Street Plan

Adequate provision for traffic circulation in Clayton in the future can be made only if relief of the local arteries is afforded through (1) completion of the major highways now planned or under construction outside the city, and (2) construction of a high capacity bypass around the central business district. The former will remove considerable volumes of traffic now forced through the city on Clayton Road, Hanley, Brentwood and other arteries; the latter is most essential for the relief of Maryland, Forsyth and other local streets in the central business district which are burdened by east-west through movements between the areas west of Clayton and downtown St. Louis.

The major street plan indicated on Plate 13 is predicated on the assumption that these metropolitan area thoroughfare improvements, including the Rock Island bypass, will be constructed as described hereinafter, and it should be emphasized that the system of local streets shown on the plan will not be adequate - and cannot be made adequate except at prohibitive cost - without the other major thoroughfare improvements to relieve existing Clayton streets.

Metropolitan Area Thoroughfare Plans

Plate 10 showed the location of Clayton with respect to certain metropolitan area highway proposals. To the south is the Daniel Boone Expressway (T.R.-40) which is now being constructed as a four-lane expressway with full control of access throughout the length pictured. This highway is in use west of Brentwood Boulevard and under construction between Brentwood and an interchange with the Red Feather Express Highway in Forest Park. Its completion will afford substantial relief to Clayton Road, now increasingly congested.

A proposed location for the Innerbelt Expressway is shown on the drawing by a dashed double line running in a north-south direction. A bond issue of \$16,000,000 was approved in 1955 by the voters of St. Louis County for



construction of the central portion of this circumferential highway. The location shown is a modification of the so-called "Fact Book Route," which was described in the Fact Book or pamphlet issued prior to the Bond Issue election. In December 1957, an engineering report was submitted to the St. Louis County Council by the Sverdrup and Parcel Engineering Company which made a benefit-cost study of several routes. All of the routes receiving detailed consideration in this report passed through some part of Clayton. (The McKnight Road route fell outside of Clayton but was not considered in detail.) In May, 1958, the St. Louis County Council adopted a resolution expressing their intention to establish the Innerbelt Expressway route on an alignment west of the Terminal Railroad relocated, as indicated on Plate 10. While the exact location of the route must await final, specific determination, the general location approved by the Council is much less destructive of Clayton property than any of the other routes and can be satisfactorily related to existing and probable future urban development.

The two expressways described above, the Daniel Boone and the Innerbelt, together will provide the required bypass of the entire city permitting through traffic in both north-south and east-west directions to avoid Clayton streets completely, yet improving access to the city from more distant sections of the St. Louis area.

An effective bypass route must offer a time saving to the motorist. That a substantial time saving would be available upon completion of the Daniel Boone and Innerbelt is demonstrated by comparison of the actual driving time on one east-west and two north-south routes with the estimated driving time between comparable points on new facilities. Thus, it is estimated that a saving of nearly eight minutes (in the present 12-minute driving time) could be effected by using Daniel Boone Expressway in lieu of Clayton Road between their interchange and McKnight Road, and savings of four and three and one-half minutes respectively (well over half of the present driving time) by using the Innerbelt in lieu of Brentwood-Forsyth-Mapleview and Hanley Road from Clayton Road to Delmar Boulevard.

Insufficient traffic data is available to permit an accurate determination of the amount of bypassable traffic. This must await the availability of the traffic data collected for the Metropolitan Transit Study. However, some idea of the level of bypassable traffic on Clayton Road may be obtained by noting the reduction of 24-hour volumes at each principal intersection, estimating the improvement of access to various areas along Clayton Road and assuming that

the level of through traffic along Clayton Road is about equal to that in the central business district as determined by the special survey mentioned before. Combination of these factors results in an estimate that 57 percent of the westbound traffic on Clayton Road at the eastern city limit is bypassable. This is the figure used to arrive at the estimate for bypassable traffic shown on Plate 12.

The remaining 43 percent of the 1980 estimated traffic demands on Clayton Road is still considerably more than the street can handle on the existing right-of-way with at-grade signalized intersections. The opening of the Daniel Boone Parkway will offer temporary relief, but traffic flow on Clayton Road will mount again to exceed present peak-hour volumes and further relief measures will be required.

Clayton Road lies partly in the City of Clayton and partly in the City of Richmond Heights to its south. Due to this divided jurisdiction in control and the necessity for complete collaboration between the two cities in providing adequate funds for the improvement, as well as in the over-all design, which presents difficulties from a financial standpoint, it would be efficacious and desirable if the improvement of Clayton Road could be carried out as a state or county project. This is justified also by the large proportion of through traffic which uses the route between the City of St. Louis and parts of St. Louis County.

One other major highway is planned outside of Clayton which will influence future traffic in the city. This is the Forest Park Expressway. This facility will extend Forest Park Avenue under Kingshighway Boulevard in St. Louis, through the northeast corner of Forest Park crossing under Grand Drive, Union and Lindell Boulevards and thence westward along the old Rock Island right-of-way a half block north of Lindell Boulevard to the St. Louis city limits near Skinker.

Plate 10 shows a proposed extension of this highway through University City to Forsyth Boulevard. Following is a discussion of Clayton's portion of the project.

Rock Island Bypass

The abandoned right-of-way of the Rock Island Railroad offers the most feasible location for the required bypass route around the central business district. This project has been the subject of some interest for a number of years but no comprehensive benefit-cost analysis has ever been made.

The most recent study (prepared for the Mayor and Board of Aldermen by the Technical Service Corporation and submitted in June, 1955) contained three schemes for construction of a connection between Forsyth Boulevard and Gay Avenue with a cost estimate for each scheme. The least expensive of these schemes contemplated at-grade intersections with Hanley and Brentwood and was estimated to cost \$1,371,550 (1954 prices) including the construction of Gay Avenue.

The special survey of 1955 indicated that at least one-third of the peak-hour traffic westbound on Forsyth is through traffic. On this basis, 730 of an estimated 1980 peak-hour demand of 2,200 vehicles would be bypassable. Since an estimated three minutes - over half the present driving time - could be saved along a limited access bypass route between the eastern edge of the city at Forsyth and the western edge at Ladue Road and Gay, even though the bypass is a little longer than the combined existing streets, through traffic would be encouraged to use the route. Further, when the Rock Island bypass is connected to the Forest Park Expressway as part of a major radial route leading to the St. Louis central business district, some of the through traffic will be diverted before reaching Clayton.

The Rock Island bypass should be built to a high standard for its full length with grade separated intersections and with access at such strategic points as Ladue Road, (via the Innerbelt), the Innerbelt Expressway, Brentwood, Hanley, Forsyth and at important cross streets in University City. Access from the bypass to Ladue Road would be provided by using the Innerbelt between its interchange with the Rock Island bypass and its interchange, consisting of on and off ramps, at Ladue Road. Since the Rock Island route will be expensive and since traffic from other parts of the urban area not now entering Clayton will be diverted to this route, it should be constructed as a St. Louis County project rather than a local one.

Detailed design of the Rock Island bypass and of the access ramps and other connections thereto are beyond the scope of the present study. However, the general treatment of the route and its proposed interchanges is indicated on Plate 13. Connection to Ladue Road would be accomplished by way of the Innerbelt Expressway, as noted before, an interchange between the latter and the Rock Island Expressway being contemplated in the design studies of the Innerbelt. The connections at Brentwood and at Hanley would provide access at the south edge of the business district, but these need be only ramps at Hanley - one for westbound traffic to leave the expressway and one for eastbound traffic to

enter it. A more detailed study may reveal the feasibility of allowing eastbound traffic on the expressway to enter the central area at Bemiston.

The Rock Island route would be elevated in the vicinity of Forsyth Boulevard and no direct connections are proposed with Forsyth since they would result in too much interference with the large parking lot. Access to and from the expressway can be accomplished by use of Jackson which will require widening, and by a ramp at the northeastern corner of the Famous-Barr lot.

Access to the expressway would also be provided at Pershing Avenue, and it is proposed to extend Pershing as a major street between Hanley and Meramec which will require opening a new street west of Central. There is, however, no need to extend Pershing beyond Meramec and the present narrow street could be one-way - preferably for eastbound movements.

Proposed Major Street Routes and Improvements

The Major Street Plan on Plate 13 is designed to make the maximum use of existing trafficways in Clayton with such changes, widenings or other improvements as may be necessary, along with the major metropolitan thoroughfares, to meet their anticipated traffic demands. No additional major streets are proposed since new trafficways would invade the privacy of the city's fine residential areas and adversely affect its residential character. Instead, the proposed plan will further protect residential property by channeling the principal traffic movements on a relatively few arteries, which can be made more adequate and inviting for this purpose.

The section on the central business district estimated that nearly 3,000,000 square feet of retail and office floor area could eventually be developed in the district, requiring about 14,000 parking spaces. Assuming that about half of these cars would be in motion during the peak traffic hour and in addition, about one-third more or 2,500 extraneous vehicles would be passing through the area at the same time, an aggregate capacity of 9,500 cars would be needed on these streets. Since the total capacity of central business district portals will be well over 10,000 cars per hour with the present and contemplated improvements, these streets will be adequate to accommodate the expected traffic demand. Further, all streets within the central district are designated as major streets and can accommodate the movements therein although changes and improvements will be necessary from time to time.

With the exception of the bypass routes, Pershing - one block only - Jackson and Sappington, no new right-of-way is required for improvement of any of the major streets. Efforts have been made to coordinate the proposals with the major street planning of neighboring cities, particularly with University City.

A brief description of the proposed routes follows:

East-west Routes

Kingsbury Boulevard. Proposed for two moving lanes, minimum development, this route should carry comparatively low volumes of traffic, but is needed to permit interchange between three north-south routes outside of the congested areas of the business district.

Pershing Avenue. As described before, this street would provide access to the Rock Island Expressway, and it is proposed that Pershing be extended one block westward to Meramec which connects to North and South Road at the edge of University City. Both Pershing Avenue and North and South Road are included in the major street system being developed in University City and the extension of Pershing Avenue in Clayton would help to coordinate street improvements in the two adjoining districts.

Ladue Road-Maryland Avenue. This is one of the most important major arteries, being required to carry through traffic on the western portion of its length and local central business district traffic on the east portion. Pavement widening for four moving lanes is recommended west of Gay Avenue. Pavement widening may be required also near intersections with other major streets to provide protected left-turn lanes. Although the eastern portion of Maryland traverses residential development of high character, it carries considerable traffic because it is a direct extension of that part within the central business district and serves as a distributor for central business district traffic. This part of Maryland will be relieved by construction of the Rock Island bypass through University City to connect with the Forest Park Expressway since traffic now using Maryland Avenue to Millbrook will be diverted to the bypass route.

Forsyth Boulevard is the main east-west artery through the business district. It should be improved to its fullest traffic capacity, with pavement widening eventually to permit adequate left-turn storage lanes at important intersections. The improvement indicated north of Ladue Road, is a simple widening by two feet and provision of curbing

next to the median on both roadways. This widening is as much a maintenance measure to prevent traffic driving in the median strip as to provide increased traffic capacity.

Carondelet and Bonhomme, both are needed for east-west circulation in the business district, access to parking areas, etc. Development for four full moving lanes is recommended. As aforementioned, it is possible that one block of Carondelet between Central and Meramec may be vacated to facilitate a new court building and the construction of expanded parking facilities in the Atwood Park area.

Sappington. West of Meramec this street will be used for westbound traffic leaving the expressway. Between Meramec and Bemiston the street should be widened to accommodate vehicular movements at the southern edge of the business district. The extreme eastern portion should be vacated and connected into Bonhomme as shown on the plan.

Wydown Boulevard. No change in pavement width or general character is recommended. The street collects neighborhood traffic bound to Hanley, Big Bend, DeMun and Skinker and there is a possibility that access to Clayton Road during peak hours may be limited to intersections with these major streets only. The high crown of the pavement needs reduction in order to permit two moving lanes in each direction. Pavement widening in the median strip is being accomplished for left-turn storage lanes at Hanley Road and is recommended eventually at Big Bend.

Clayton Road. Even after the Daniel Boone Parkway is opened, Clayton Road will carry large volumes of both through and local traffic so that practical capacity of major intersections will be exceeded by 1980. In order to minimize purchase of additional right-of-way, grade separations are recommended as future treatment for the intersections at Skinker, Big Bend, Hanley and Brentwood. Cost estimates were made of such a structure at the intersection of Clayton and Brentwood to carry two lanes of Clayton Road traffic, one in each direction, over Brentwood Boulevard, and thereby permit continuous through movement. The estimated costs of two possible types of structure are indicative of the financial burden which increasing traffic volumes will place on the community. With filled retaining wall construction such a separation would cost approximately \$280,000; supported by mushroom type concrete piers it would cost approximately \$345,000. Current trends indicate that many such grade separations will be required in urban areas in the future, and such treatment appears to be the only practicable means of handling the expected traffic at the major intersections on Clayton Road.

Because so much of the traffic on Clayton Road originates or is destined for areas far beyond Clayton, it is only logical that the state or county finance these separations.

North-south Routes

Brentwood Boulevard. This major north-south artery and business district access route has recently been widened to six lanes between Walinca Drive and Forsyth Boulevard and the widening south to Clayton Road should be completed in the near future. Pavement at the existing Terminal Railroad underpass narrows to 40 feet, which will permit four moving lanes only at low speed. However, traffic congestion at peak hours is greater at the Clayton Road intersection than at the underpass. In normal (off-peak) operation, traffic weaves to form a single moving lane in each direction through the underpass. Thus, the widening of the underpass need not be undertaken until decisions are made regarding the Innerbelt and plans therefor have been finalized. The pavement north of Kingsbury should eventually be widened if and when Warder Avenue is improved in University City.

Meramec Street. This connects to North and South Road in University City which is contemplated as a continuous route northward to supplement and relieve Hanley Road. Within Clayton it serves the purposes of access to and circulation within the central business district to and from the north. It is possible that Meramec should eventually be teamed with some of the other north-south streets and used for one-way traffic. Meramec is not proposed as a major street south of the Rock Island right-of-way because it would adversely affect good residential development.

Central and Bemiston. Both are needed for north-south circulation in the business district, access to parking areas, etc., and development for four full moving lanes is recommended. These streets together with Meramec provide the means of north-south circulation in the future office area between Brentwood and Hanley, and Sappington Road should be widened from Bemiston to Meramec to facilitate easy movement at the south edge of the district. As mentioned above, it may be necessary eventually to use them for one-way movement.

Hanley Road. The widening of Hanley Road from Clayton to Wydown is a much needed project now in progress. Additional pavement widening is recommended to permit left-turn

storage at Bonhomme, Carondelet and the entrance to the Scruggs-Vandervoort-Barney parking garage, since the volume of left-turns into the business district by northbound traffic on Hanley Road will continue to increase and additional storage space therefor will be required. Widening to four lanes from Maryland Avenue north to Delmar Boulevard should be undertaken as a joint project with University City. A grade separation with Hanley Road over Clayton Road, is now needed and will be imperative in the future. Another important improvement would be elimination of the jog by extending Hanley southeastwardly through the extreme northeastern portion of the Lake Forest subdivision.

Big Bend Road. This is one of the few long and continuous cross-town routes in St. Louis County. The route has a very large traffic potential but is poorly developed and heavily congested at many points. Widening to four lanes with separate left-turn lanes is the recommended eventual treatment in Clayton. Because of capacity restrictions on other sections widening for full length in Clayton is not an immediate requirement. Attention should first be concentrated on intersections, particularly at Wydown Boulevard. A continuous right-turn should be provided at the intersection with Clayton Road for westbound traffic on Clayton desiring to turn north on Big Bend and for southbound traffic on Big Bend desiring to turn west on Clayton.

Traffic Control and On-street Parking

Control of traffic using the street system is necessary to provide the practical roadway and intersection capacities required for present and future traffic. This part of the Major Street Report is intended not to be a detailed traffic engineering study, but rather to point out the general principles of traffic control which must be applied if the street system is to function properly, and to indicate selected locations in Clayton where these principles should be applied.

The principal means available for increasing the capacity of existing streets are:

1. Restriction and selective removal of on-street parking.
2. Control of traffic at intersections by traffic signals and signs.

3. Increased use of lane lines, barrier lines, word markings, directional pavement markings and channelizing islands.

4. Control of pedestrians at intersections by means of cross-walks and walk-wait signals.

Each of these is discussed below under the two general headings of On-street Parking and Traffic Control.

On-street Parking

Conflict between the two basic space needs of the motor vehicle - space on which to travel and space on which to park - should be held to a minimum. As traffic demands increase, additional curb parking restrictions will have to be applied, so that by 1980 curb parking will have been practically eliminated from every block of every major street during peak hours with the possible exception of a few blocks in the central business district where the pavement is very wide. This is, of course, conditioned upon provision of adequate off-street parking in accordance with the preceding section on the central business district.

There are only a few major streets in Clayton where the pavements are sufficiently narrow and traffic sufficiently heavy in off-peak hours to require complete prohibition of parking. Curb parking has already been removed from the more heavily traveled portions of the principal north-south streets, Brentwood and Hanley, and from Forsyth in the heavily traveled blocks east of Hanley. Parking should be prohibited at all times on Big Bend for its full length in Clayton at least until the proposed widening is completed. Parking should also be removed near all intersections of major streets so that the curb space can be used by turning vehicles.

The city has made substantial progress during the past several years in changing from diagonal to parallel parking. Additional changes will be needed in the future as traffic increases, and the only diagonal parking that might be continued is along the west side of the courthouse where the curbs have been set back.

There are numerous opportunities for restricting parking to the advantage of traffic during peak hours. These restrictions can be applied to one or both sides of the street depending upon peak-hour volumes in opposing directions. Heavy opposing volumes on Forsyth justify prohibition

of parking on both sides between Maryland and the east city limits during the evening peak hours (4:00 p.m. to 6:00 p.m.) In University City, parking is prohibited on the south side of Forsyth during the morning peak hours (7:00 a.m. to 9:00 a.m.) and on the north side during the evening peak hours. Similar regulations have been applied in Clayton along the north curb bordering Washington University. Parking should also be prohibited along Jackson south of Maryland during the rush hours, and preferably all day.

Traffic Control

Beginning with no control at all, traffic control at an intersection can be of the following types.

1. Two-way preferential yield.
2. Two-way preferential stop.
3. Four-way stop.
4. Four-way yield.
5. Traffic signals.
 - a. Straight timed.
 - b. Traffic actuated by minor street.
 - c. Full phase for all major turns and through movements.

Practically all types exist at some point in Clayton, although not necessarily always at the proper locations. No control is exercised or needed at intersections of minor residential streets, but there are a few two-way preferential yields and numerous two-way preferential stops where a minor street intersects a major street. Examples of the latter are located along Clayton Road.

The four-way stop is extensively used throughout Clayton and the St. Louis metropolitan area. Under this system of control, all traffic approaching the intersection is theoretically required to stop and then proceed on a first-come-first-served basis. Left-turns are often permitted from all approaches. In practice almost no one comes to a full stop (unless necessary to avoid striking another vehicle) so that locally the four-way stop actually operates as a four-way yield. Drivers in the St. Louis area have become accustomed to this system so that intersections controlled by the four-way stop handle surprisingly high volumes of traffic with relative safety, much higher than would be possible were

the signs strictly observed. The real danger in the system is the disparaging of the meaning of the stop sign so that when the occasion arises where the motorist should actually be required to stop, it is difficult to require him to do so.

Where traffic volumes are very high with more than one moving lane in each direction on two or more approaches and heavy turning movements, the four-way stop or four-way yield declines in efficiency to the point where there is danger of complete stoppage. The driver loses his ability to sort the factors which determine his turn, becomes irritated or confused, makes false starts and the whole system breaks down. In such cases, a traffic signal is definitely warranted. Where a stop sign is used, it should be strictly enforced. In so doing, Clayton may set an example in re-education of drivers which can spread to the whole metropolitan area.

The traffic signals now in use in Clayton handle large volumes of traffic with efficiency, but additional signals are needed. Besides the installations recently completed or in process, including Wydown and Hanley, three proposed signals should be installed in the near future along Maryland Avenue at the north edge of the business district. An additional warrant for these signals is the relatively high volume of pedestrians who desire to cross the street, particularly at Brentwood, Meramec and Central. A high volume intersection controlled by the four-way stop or four-way yield is unsatisfactory for use by concentrations of pedestrians.

Plate 13 shows the location of existing and proposed signalized intersections. It is recommended that every intersection of two major streets eventually be signalized, the only exceptions being those where interchange ramps have been designed to eliminate the need for signals. Recognizing the fact that traffic difficulties at one point frequently compound difficulties at another, a careful analysis of the requirements and limitations of each signal installation should be made.

The intersections specifically named should receive the highest priority, the remainder being spaced over a period of years. With the rapid progress in application of electronics to traffic control, it is likely that the entire system will be coordinated and traffic actuated (actuated under specific conditions by impulses from individual vehicles) to make rapid and precise adjustments to the variations of traffic demand. Such equipment is in successful operation in Waco, Texas.

Specific recommendations concerning the application of pavement markings and pedestrian control devices are beyond

the scope of this report, such recommendations logically forming a part of a detailed traffic engineering study. Experience has shown, however, that careful use of such markings can do a great deal to improve traffic conditions and the attitudes of motorists and pedestrians.

Channelizing islands have been mentioned before in the description of major street routes. Such islands are desirable at every intersection where the volume of turning movements is high. Pavement widenings will be required to accomplish this in a number of instances. Careful designs based upon recognized standards and detailed traffic data should be prepared for each case.

The proper location of bus stops is important because vehicles stopped or standing on the pavement not only deprive other traffic of a usable portion of the roadway, but by causing a reduction in the speed of traffic, lower the capacity of the remaining traffic lanes. The volume of transit movements is comparatively low in Clayton, but at least one example can be cited of a poorly located bus stop. On the east side of Jackson immediately north of Forsyth, buses stopped too close to the intersection interfere with the heavy right-turning movement from Forsyth. If an attempted left-turn from Jackson into the parking lot on the west side of the street is blocked by southbound vehicles waiting for the traffic signal (as is frequently the case at peak hours), all northbound movement on Jackson is blocked. The left turn blocks the left lane and the bus blocks the curb lane. The westbound curb lane on Forsyth stops, a line begins to form and the compounding of traffic difficulties begins.

This last illustration is typical of the complex nature of modern traffic and the constant attention to detail which will be required if Clayton is to keep pace with its mounting traffic problems.

PARKS AND PLAYGROUNDS

Public parks have long been considered as essential portions of urban areas, but today they are especially important. With the shorter work week, urban citizens have more time for recreation and the higher population densities have resulted in fewer opportunities for enjoying same at the home or on vacant property. Organized games and supervised play are becoming increasingly popular and should be provided in public areas. In addition, attractive open spaces are essential in maintaining desirable character and values in residential sections. They are especially needed in good suburban areas such as Clayton.

In rapidly growing areas it is possible to acquire park sites and school grounds while the land is still vacant which results in substantial economies. Shaw Park was so acquired and local citizens have enjoyed many advantages from this far-sighted action of earlier administrations. Where a community is almost completely developed - as Clayton now is - park areas can be provided only by acquiring and removing other urban structures or sometimes a sizeable area such as an institution may be abandoned and can be used as a park.

Need for Local Parks

A widely accepted standard is that there should be one acre of park for every 100 persons in the urban area. However, this ratio primarily applies to the entire urban area rather than to individual suburban communities. A sound minimum standard for a community like Clayton is one-half acre of available playground and recreation area for every 100 persons. This latter ratio includes play areas available at public schools.

Ratios in Clayton

Shaw Park comprises 47.7 acres, the local public school grounds a total of 62.37 acres, and the Oak Knoll area to be acquired contains about 21 acres. However, only a comparatively small portion of the school area is available for play and recreation. For example, the new senior high site contains 21.62 acres but very limited space is available for games and play. The athletic field contains 19 acres, but currently is not open to the public. Many of the elementary school grounds are small and the buildings cover a substantial portion of the site.

It is conservatively estimated that not more than 14 acres of school property are available for play and recreation. This, with Shaw Park and the new Oak Knoll Park, gives a total of about 83 acres of recreational area in comparison with the standard of nearly 92 acres.

Location of Recreation Areas

The largest recreation area, Shaw Park, lies in the western portion of the city. There has been a serious lack of acreage in the eastern section where public parks are badly needed, particularly in the district between Wydown and Clayton Road east of Hanley which contains much apartment development and the highest population densities in the city. However, with the fine support of the citizens of Clayton in approving a bond issue for the purpose, acquisition of the Oak Knoll property will provide an attractive park to serve this section.

Proposed Park and Recreation Areas

With acquisition of the Oak Knoll site, the areas available for additional recreation use are quite limited in the city. A few vacant lots suitable for playgrounds of the "tot lot" type are still available, but even these will be preempted by private development unless they are acquired in the very near future. Those proposed are described hereinafter.

The fine 48-acre Shaw Park already serves the recreational needs of the west portion of Clayton, and purchase and development of the Oak Knoll tract will create an outstanding park in the eastern section of the city. Much of this area is heavily wooded, the southeastern corner can be further improved with an attractive lake and the northern portion is adaptable for some play and active recreation. Picnicking facilities are especially desirable, and fine opportunities exist for developing a system of interesting walks.

Due to the spaciousness of much of the residential property in Clayton, the lack of playground sites is not so serious as in a more densely populated community, although more conveniently distributed areas of this type would be desirable if such were readily available. A few small playgrounds of the "tot lot" type are proposed, one of the largest of these being in the Blue Ridge apartment district, the others generally in districts where the lots are smaller and population somewhat denser than in the city.

as a whole. Since the city is now so completely built up and only scattered vacant lots exist, even these will be absorbed and the opportunities to establish the small play areas will be lost unless they are acquired almost immediately.

Four tot lots, aggregating about 1.4 acres, are proposed as follows:

1. An area of nearly one-half acre consisting of two presently vacant parcels on the southeast corner of Westwood Drive and Parkdale Avenue. The surrounding intensive apartment development makes this location especially desirable for such play area.

2. An area of a little under one-half acre currently vacant on the south side of Westmoreland Avenue near the Maryland Avenue school site.

3. A lot comprising about one-third acre on the northwest corner of DeMun and Arundel Place.

4. A lot of about one-quarter acre on the southeast corner of DeMun and Southwood Avenue. This area adjoins an existing apartment building and is located at the edge of the apartment district in east Clayton, where play space is at a premium.

Because of their limited size these areas would have to be rather intensively used and careful control would be needed both in their design and in the supervision of activities to avoid objectionable effects on adjoining residences. Play facilities should be confined entirely to children of pre-school age and liberal use should be made of landscaping at the edges of each lot to reduce noise, improve the appearance and help to concentrate play near the center of the lot.

Even though the school grounds are smaller than desirable, intensive use should be made of these areas for recreation for the older children. Modern school and recreation practice recognizes the desirability of utilizing school sites for year-round playgrounds preferably with supervision during the summer months or other non-school periods. While parts of Shaw Park can be used for active games and sports, the school grounds are important adjuncts of the recreation system also and close cooperation between school and recreation authorities is desirable in developing and operating such facilities.

These areas, together with Shaw Park, the new Oak Knoll Park and the tot lots total some 84 acres. This is a little below the general recreational standard of 92 acres which a suburban community the size of Clayton might normally be expected to have. However, the two parks are well placed in the city, and much of the deficiency is offset by the large lots and exceptionally good development of Clayton as a whole. Further, the city almost adjoins Forest Park, which is outstanding both in size and in the range of its recreational opportunities.

Protection of Existing Parks

A field check of property in Clayton reveals that except for the four areas described hereinbefore, there are few potential park or playground sites remaining in the city. The large vacant tract between Wydown and Forsyth is owned by Washington University, part of this now being used by the University and the remainder eventually to be utilized for the housing of students, and there is no reasonable possibility of the city's acquiring any of the tract for park use. The two colleges, Concordia and Fontbonne, can utilize their total buildings and would undoubtedly strongly object to the use of any portion thereof as a public park.

Considering the limitations on any additional park space it is most important for Clayton to protect and conserve its existing recreation sites. There have been some attempts to utilize parts of these areas for other, nonrecreational purposes, particularly in Shaw Park, and these attempts must be strongly resisted if the city is to receive the full benefit from available park property. Even though Clayton is considerably above average in the character of its homes and much of the city is spacious, parks and recreation have their place in the community and are needed - open space and greenery as well as facilities for sports and games are growing in importance in modern urban living.

ZONING REGULATIONS

Clayton has had the benefit of zoning for many years. In contrast with zoning ordinances adopted during the same period in some other communities, the regulations in Clayton have been revised from time to time and kept reasonably up-to-date so that the present ordinance is generally modern and satisfactory. However, further revision of the text is desirable to clarify certain provisions and to facilitate administration, and some changes in districts and district boundaries are needed to bring the regulations in conformity with the proposals of the central business district plan described previously.

Because of the need for modernizing or for extending the scope of these regulations in the past, several changes are recommended in the text of the zoning ordinance either to include a new type of regulation or to expand the current requirements. Without an over-all revision, the ordinance itself has come to contain regulations which are in inappropriate sections or which are repetitious and redundant. Further, it includes a long section concerning the licensing and regulation of lodging and boarding houses which constitutes an ordinance within the zoning ordinance and is not directly pertinent to zoning. Consequently, a completely new text has been proposed as a comprehensive revision of the present one.

Proposed Zoning Regulations

One of the major changes proposed in the regulations is their re-organization for purposes of clarification and to facilitate zoning administration. The specifications concerning licensing and controlling boarding houses have been omitted entirely and should be adopted as a separate ordinance. The detailed parking lot standards and requirements are removed from the subsection under the commercial district regulations and combined with all other parking requirements in a separate article on parking. All height and yard and area requirements are placed in a table for easy reference. The section dealing with uses to be authorized by special permit is removed from the article concerning nonconforming uses and more appropriately prescribed in a separate article.

Apart from the re-organization, some changes and additions are recommended in the regulations themselves. For example, several definitions have been added and other definitions revised. One commercial and one residential district have been eliminated but a new office commercial

district and a new multiple dwelling district have been added. The parking requirements have been refined and extended and off-street loading regulations have been included. One of the major changes in the ordinance involves the regulation of building heights in the central business and office districts on the basis of floor area, as described hereinafter, rather than on the basis of a specific number of stories.

A brief summary description of the proposed zoning districts and the principal regulations therein is contained in the paragraphs which follow.

Dwelling Districts

Seven dwelling districts are contained in the present zoning ordinance; five of these are retained as at present, one is combined with another district, and a new multiple dwelling zone is added in the proposed regulations. Two of the districts are designed for single-family residences and related residential uses such as public schools and parks, the differences being primarily in yard and area requirements. Thus, the lot area per family specifications are 20,000 square feet and 7,500 square feet respectively. A third single-family district, now requiring 5,000 square feet per family, has been eliminated in the proposed ordinance by allocating this property to the 7,500 square feet per family zone.

One two-family district and four multiple dwelling zones are included in the proposed regulations. Each of these requires a minimum of 5,000 square feet for a single-family residence and of 2,500 square feet per family for a two-family home, but the multiple dwelling requirements are 1,750, 1,500, 1,000, and 500 square feet per unit respectively. The last designated is proposed along Brentwood Boulevard and is intended for apartments of the efficiency type convenient to the offices and other employment centers in the central business district.

The requirement of only 500 square feet per family is relatively low except for buildings of the efficiency or hotel apartment types, and to prevent over-occupancy of this district, it is recommended that a minimum housing standards ordinance be adopted to prescribe, among other things, standards for apartment size in relation to the number of occupants thereof. In addition to providing housing for workers and others convenient to employment in the central business district, the construction of efficiency apartments along Brentwood would be advantageous from a tax standpoint

due to the favorable ratio of revenue from the apartments in relation to public service costs.

Buildings of three stories are to be permitted in three of the multiple-dwelling districts, two and one-half stories in all other dwelling zones. Moreover, structures in the three-story districts can exceed such height if setback distances are increased to provide additional open space.

Commercial Districts

Four commercial districts are provided in the proposed ordinance, including the central business district and a new zone primarily for offices. These are the same in number as the present but somewhat different in their application. The "C-1" Commercial District (designated as "G" Commercial in the present ordinance) intended mainly for retail, office and service establishments of the neighborhood service type is retained but the present "G-1" District which has the same use regulations as the "C-1" District is eliminated and combined with the latter.

The "C-2" Commercial and the "C-4" Central Business District (designated as "H" and "H-1" respectively in the present regulations) are also retained in the proposed ordinance, the "C-2" District permitting all the commercial uses allowed in the "C-1" District and in addition such establishments as plumbing and electrical repair shops, caterers, veterinarians, dyeing and dry cleaning works (of limited size) and the like. The "C-4" District permits these and such additional uses as printing plants, frozen food lockers, and various service and repair shops.

In order to promote the desirable development of part of the area between Hanley Road and Brentwood for office buildings, as discussed in the Central Business District chapter, a new zoning district is proposed primarily for office buildings, with limitations on other commercial establishments. This "C-3" Office Commercial District is designed to permit all types of offices including business, finance, professional and other private or public offices, along with medical and dental clinics, hotels or inns and parking areas or structures, but no retail business or service except restaurants and other establishments primarily for the convenience of users of the office structure. Such convenience establishments would include drug stores, tobacco or newsstands, barber or beauty shops, et cetera, when located within the office building and when occupying not more than ten percent of the total floor area of the building.

In general, except for the proposed change in the height regulations in the Central Business and Office Commercial Districts, the height, yard and area requirements in the different commercial districts would be approximately as at present. However, the contemplated changes in building heights within the central area represent a considerable departure. These are intended to foster flexibility in building design and construction and to encourage open space around structures. Briefly, in lieu of the present five-story limitation in the Central Business District, a basic floor area to lot area ratio of 3.0 would be established, irrespective of the building height, which would make the height limit depend on the proportion of the lot used by the structure. Further, increases in the basic floor area would be allowed on the basis of three square feet for each square foot of open area, which would place an additional premium on openness. In application, the proposed regulations would restrict a building to three stories when the entire lot was occupied, but would allow a five-story building with one-fourth of the lot open and a nine-story building where only half the lot area was occupied. Similar variations in height would be possible on other occupancy bases but no premium would be allowed for more than two-thirds of the lot in open area. On this basis and assuming that the required parking spaces could be provided, a structure up to 15 stories would be theoretically possible. An additional premium of not more than one story would be allowed in proportion to the open landscaped area.

Adequate off-street parking accommodations are very important to the prosperity of both the office and retail areas. The requirements of the zoning ordinance in this respect should be strictly observed, but a premium on providing spaces over and above this requirement is proposed by allowing an increase in the basic floor area ratio when additional parking is provided.

In lieu of the present three-story limit in most of the area encompassed by the proposed Office Commercial District, a basic floor area to lot area ratio of 2.0 would be used in the new district with increments in floor space based on two times the area of the lot left open. This would mean a two-story limit with 100 percent building coverage, a three-story limit with 20 percent open, and a six-story building with only 50 percent lot coverage. Similar premiums to those in the Central Business District would be placed on open landscaped area and on providing off-street parking accommodations in addition to the zoning requirement.

Industrial District

Retention of the present "I" Light Industrial District is proposed in the revised ordinance although this will be classified as a Service District and have somewhat more limited application in the city. Permitted uses are generally those which are not objectionable or offensive by reason of the emission of odor, dust, smoke or noise. The present height and area requirements are retained also.

Off-street Parking and Loading

It is proposed that all off-street parking and loading requirements be combined in a specific article for this purpose listing the requirements for particular types of uses and governing the appropriate improvement and maintenance of parking lots. The requirement of space for off-street loading is new in Clayton, but is consistent with present-day zoning practices in many other communities.

Special Uses

Certain types of use may or may not be inappropriate or objectionable depending on a specific location, the manner of development and the relation to surrounding property and to other parts of the community. These special uses - institutions, nursing or convalescent homes, the extraction of raw materials, off-street parking facilities and others - may even be permitted in certain dwelling districts under the proper conditions and safeguards. These are not the same as nonconforming uses and consequently, it is proposed to place the special use regulations in a separate article. Before any such use is authorized, referral must be made to the Plan Commission for review and report concerning its effect on the character and development of its environs and on the rest of the city. For final approval by the Board of Aldermen, the affirmative vote of five members is required.

Other Provisions

Except in a few details, the remainder of the proposed regulations are approximately the same as the present. An article is retained concerning the use of nonconforming buildings and land, as well as one dealing with the functions and duty of the Board of Adjustment. A few provisions in the present regulations which are no longer applicable to Clayton because of changed conditions have been omitted from the proposed text.

Changes in District Boundaries

Except for revision of the districts in the central business area and the elimination of one of the single-family zones, changes proposed in the boundaries of districts in the city as a whole are rather minor. For example, no change at all is recommended in that part of Clayton east of Hanley Road, excluding the area north of the Rock Island right-of-way. Changes in the commercial districts consist mainly of realignment of zones caused by elimination of the present "G-1" district and a few reclassifications of others. The principal modification of the Service District (present "I" Light Industrial District) is proposed within the business area east of Hanley, as described below.

In order to promote the arrangement of retail business, office and service areas proposed in the central business district plan, revamping of the zones east of Brentwood Boulevard is recommended. A new zone primarily for apartments of the efficiency type would be established along Brentwood, and the new Office Commercial District would encompass the property now commercially zoned along Bonhomme Street and along Meramec, Central and Bemiston to its south as well as part of the frontage on Carondelet east of Bemiston. To provide additional space for expansion of service industries, the Service District would be enlarged from the present Industrial District along Hanley Road south of Carondelet, but that east of Jackson occupied by Famous-Barr and the Glick Building and parking would be reclassified for commerce in accordance with its actual use.

With these changes and the revision of the text, the zoning regulations in Clayton would be completely up-to-date and in conformity with the existing and planned development. Except for possible future business zoning along Carondelet east of Hanley Road - should this area become feasible for redevelopment as a unit - little further change should be needed for many years in the future. The new zoning regulations would insure continued protection of the city's fine residential property, and the proposed commercial district revisions would help to bring about the desirable arrangement and construction of buildings and compliance with parking standards as an aid to continuing high-type developments within the central business area.